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THE RELATION OF THE MEDICAL PRACTITIONER TO HEALTH DEPARTMENTS *

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CHAIRMAN'S ADDRESS

As a general proposition we are willing to earn a thing but once. When a man has served years in an association, he sometimes comes to think he has earned its rewards. If, then, an office is bestowed on him he is likely to accept it as his just due and to give the duties of his position none of his brains or energy.

I have not done enough work in this Section to have earned reward at your hands, therefore, I have felt it incumbent on me to earn the honor which you have given me, by work as chairman.

Dr. Jones and I have worked out a somewhat novel plan for your meeting. This plan was submitted to the Executive Committee of this Section, Drs. Hurty, White and Gorgas, and then it had the approval of the general officers of the Association.

We submit it to you with this understanding: The responsibility for its success or failure rests on you who are in attendance on this meeting, and is shared by those who are to attend subsequent meetings.

The plan for this meeting has three parts. The first part is that in place of papers there will be committee reports on health methods. The Section will carefully consider these and then vote as their judgment directs.

Preventive medicine has newly come to American life. It has newly come to most of those who are practicing it. Two years ago there was no instruction leading directly to the position of health officer. Now Harvard and Columbia have courses preparing for such work, Michigan establishes such a department in the fall, and Northwestern and several other universities are giving courses in these subjects for medical men; various colleges of technology are giving courses in sanitary engineering which partially qualify. The School of Civics and Philanthropy gives a course in social science, and the Chicago Health Department, incorporated as the Chicago School of Sanitary Instruction, gives practical work. But, much as this appears, it is but a bagatelle as compared with the large number of physicians newly come to the position of health officer, untrained and untried, and the large number of towns with newly created health departments—like a butterfly newly come from a grub, looking around on a new world and beating a new element with a new organ—new wings. They all want to do what is right. But what is right?

Therefore, we have decided to deliberate on methods of doing things. When we have carefully counseled, we shall vote. Such methods as meet the approval of the Section will be sent to the House of Delegates or to the Council on Health and Public Instruction. The reason for thus referring the Section actions is twofold: First, the By-Laws of the Association prescribe that resolutions cannot be passed by the Sections; second, measures gain prestige by coming from the Association as a whole.

The second part of the plan is this: Prior to and during the meeting there will be a series of health talks for the general public. The American Medical Association is a peculiar organization. Its deliberations have something more to do with human welfare than those of the average organization. Hitherto it has gone to a community and deliberated behind closed doors.

The people of the host city have not seen much of those attending except as they have met them at receptions and lawn parties. That is not right. Why go to the trouble of entertaining four thousand physicians if no lasting good is to come of it? Should we not earn our welcome by conferring a lasting benefit on those who have given of their time and money for our entertainment?

A campaign of public education in southern California was begun last week. It will continue for another week. We trust that many citizens of this vicinity will have learned something new about right living as the result of lectures given by members of this Section and others.

The third part of the plan is a health education exhibit for physicians. Part of it hangs on the walls of the exhibit room and part of it is to be found in the California and Louisiana health cars.

This is the plan for this meeting which your officers have worked out.

You also honored me with an election as orator. As orator I wish to address you on "The Relation of the Medical Practitioner to Health Departments."

ORATION ON STATE MEDICINE

Death represents the passing of the human being from the known into the unknowable. What is life? What is death? Why is death? What after death? All of these are unknowable. The end of life is no more a mystery than its beginning, but the mind of the being at the beginning is too feeble to know or care. At the end it has learned much and yearns for more. It asks many questions. It does not enjoy being baffled. Therefore, everything connected with this mystery takes on attributes of mystery. The man facing death leans on his physician. His imagination clothes that physician with some of the superhuman qualities.

* Chairman's Address and Oration on State Medicine before the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

At first he was a god, and then a demigod; then a man, but bewigged and "caned" and separate and oracular; and now he wears a bob-tailed coat, smokes cigarettes and is quite human. The old-style physician was regarded with awe, was given a blind faith and was tenderly loved. His scientific service was very slight—but he was good for sickness. His coming brought peace and hope. As the scientific capacity of physicians has become more worthy of faith, they have been given less. And now the old, blind, unreasoning faith has gone and it will never return. The bringing of medicine out into the plain, white light of common day has reduced the death-rates, increased the average age at death, the average length of human life. It has substituted real for psychic benefit. But all of this is working changes which are not fully comprehended by physicians or laity. Why has the old faith died? Several things have operated to bring it about.

Chief of these is the general growth of information. There was a good deal of humbuggery in the old practice, and humbuggery has fallen into hard lines everywhere. People are now better informed, and they judge physicians and everything else better than they used to. Wonderful cures made by physicians they know now were spontaneous cures.

Drug-stores have served to break the charm in two ways. More of a spell goes with medicine when the physician ladles it out than when he writes an easily-understood prescription which the druggist dispenses. In the second place, the very matter-of-fact druggist's over-the-counter prescription ends many an ill that formerly added to the miracles of the physician.

Patent medicines and advertising doctors cure many ills strangely like the ills the physician used to cure. When a patient hears the physician abuse patent medicines and advertising doctors, that patient's faith in them often dies, but his faith in physicians shrinks a good deal also. Then, too, those advertisements on the wrappers and in the papers, taught us a great deal of the false, but there was here and there a kernel of truth, and the people are learning how to winnow the wheat from the chaff. Learning from this source, abused by physicians, has decreased general faith in physicians.

The fight on homeopathy has served to decrease the old, blind faith. For did not the homeopathic physician's patients recover? And did not the old doctor say there was "nothing in it?" He could not have been infallible.

And then Christian Science has taught the people that if they would just sit still and bear their ills, they would occasionally get in bad holes, but that often they came out all right; and those who came out all right think the physician was not so smart after all. So they pay the "Science" healer all the more jubilantly because of their resentment against the older teachings.

A large part of the old physician's work was nursing work, and then along came trained nurses and did many of those mysterious things as well as, and often very much better than, we remember the man of mystery doing them.

Then the specialist in his highly trained field makes the old-style physician look awkward, inefficient, and very commonplace; the consultant, the very philosophy of whose presence is that he knows more, necessarily makes the patient think that the old-style doctor knows less; the hospital takes the patient from an atmosphere where the family physician is the only tall, strong thing, into an atmosphere of nurses, and other doctors, and comparisons.

It is a sad thing to see some parts of the old pass away, yet it is quite inevitable. Suppose an old-style physician were to determine that he would have no nurses, no hospitals, consultants, specialists or druggists, how long would he hold any patients? The people would lose not only old-style, blind faith, but all faith; he would be discarded, friendless—an outcast. It is inevitable. We can pause to drop a tear, but after this we must move on. We must adapt ourselves to the new requirements, being sure that somehow they are for the best.

In the last analysis the thing comes back to this: The people want to be cured, or kept well. It is for them to decide how this is to be done and by whom. What position toward this change is it wise for the profession to take? My position is that nothing is gained by opposing the inevitable. Much is lost by opposing it; much is gained by adjusting oneself to it. That which is inevitable for the long run is right for the long run.

Taking it on the average, I do not think physicians make much from treating contagious diseases. Diphtheria now means but two or three visits; and probably a reputation of attending diphtheria scares away more visits than that. The same thing is true, though in lesser measure, of other contagious diseases. Occasionally a physician carries contagion, or the family thinks he does; it comes to the same thing. It costs the practice of that family at the very least.

Do you think a physician who has a reputation as a hider of contagious disease gains anything in the long run? The number of mothers who are protecting susceptible children is such a great majority that their fear and distrust of a man with this reputation presently constitute a very definite liability.

There is not much money in treating consumption, above all in the old-fashioned way. The patient may pay for the visits for a few months, but soon the money is all gone and then the physician gets nothing, and oftentimes he has to chip in to help out. But suppose the physician is slow in making his diagnosis or hides it from the health department, or from the patient or family. If you have ever stood in the streams in which the consumptives flow, I need not tell you how violently they abuse the doctor who deceived. In the long run, the only money in consumption is for the man who for himself and his patient lives up to the law.

Suppose we shift the illustration to school inspection. It is disconcerting to have a child sent home for diphtheria determined by culture when you have told the family it was an ordinary sore throat. But the case being diphtheria, the school doctor must tell the truth. Averaging all the cases, the family physician gains more by standing up to the truth than by resisting.

Again, it is quite disconcerting to have a child in one of your families come home with a card saying the tonsils should be removed when you had not so advised; but the wise thing to do is to agree with the diagnosis when it is right, and remove the tonsils. The fact of the business is, the family gets accustomed to the appearance of the mouth-breather; the family physician is anesthetized by repeated monotonies; nevertheless the child is not well—is not able to study with a high degree of efficiency and needs what is advised. Shall the physician take the position that because there is no immediate danger there is no ultimate need? There is no surer way by which he can ruin his eventual standing with that family. There is no surer way by which he can accomplish his ultimate ruin than by assuming this point of view.

These illustrations might be multiplied indefinitely.

It is axiomatic that nothing which puts a great strain on the community, the family or the individual, brings money to the physician (examples: epidemics of cholera and yellow fever). Wherever industry is paralyzed the few who can pay are more than offset by the demands on time, energy and money from those who cannot pay. Not only is there an increase in bad accounts from those that have the specific diseases, but there is an increase in bad accounts for services rendered in connection with other illnesses. Any completely disabling illness continued for more than three months makes the average man a source of loss to the physician. The physician's best source of income is from the diseases which do not greatly disturb the serenity of the community, the family, the individual. By increasing the percentage of the population who are past 30 years of age, the incomes of doctors are increased, since these are the most profitable patients. By decreasing the death-rates among babies, the physician's revenues are increased.

But it is more profitable to return to the general principles.

The end is the cure and prevention of disease. Every measure and every man is a means to that end. The community is going to look to somebody for its health conservative functions. Health departments are community agencies created by and maintained by the community. Their general reputation for altruism is better than is that of the physician. They are closer to the people. Day by day they become closer. Day by day they do new things for the people. It is the more economic way for the individual; it is in keeping with the broader economies. For all of these reasons health departments are inevitable; they will survive. The people will look to them for health conservation. When they look, shall they find the physicians there in partnership, or shall they find them in antagonism? If the community comes to regard physicians as antagonistic to health departments, do the former gain or lose? There is but one answer which far-seeing would dictate.

There is a general law of society that those who serve are supported. Society starves the useless. If the medical profession is useful, in this inevitable program of society it will be supported; otherwise it will not be. As I see it, the wise thing for the medical profession to do is to get right into and man every great health movement; man health departments, tuberculosis societies, child and infant welfare societies, housing societies, etc. The future of the profession depends on keeping matters so that when the public mind thinks of these things, it automatically thinks of physicians, and not of sociologists or sanitary engineers. The profession cannot afford to have these places occupied by others than medical men. A requisite, therefore, is that there should be places where physicians can get training in sanitation, preventable disease and in hygiene, including housing and ventilation.

This all means a readjustment of medical work. In the readjustment, the revenues of medical men who are giving a low grade of medical service will decrease to almost nothing. Christian Science, hospitals, dispensaries and general intelligence have decreased the revenue of these men until it is now less than that of skilled labor. They have no money for luxuries, nothing for a rainy day, nothing for the proper education and care of their children. Nevertheless, the man who makes his money from superficial home visits must suffer more. Even much of the little that he is now doing will be lost to him in some measure through the care of health department officers, but much more through other agencies. The children who are now going through the schools and who have been going through them for ten years, will establish the practice within the next ten years. Would we not eventually gain by willingly giving to Christian Scientists, counter prescribers and others, all those who can be cured by any form of mental therapy, and concentrating our energies on more worthy fields?

Health department work imperils the existence of certain physicians, in that it tends towards socialism; it tends toward state medicine. The citizen says, "If the state will do these things for me, why should I employ a physician for anything?" Just now hospitals and dispensaries are doing this even more potently. Whatever position against health departments any group of medical men may take, they must take a similar position against hospitals and dispensaries.

Does this mean that all medical work will be taken over by health departments and that private physicians will have nothing to do? There is no disadvantage but some advantage to the physician in this, provided there is a proper regulation of the relation between work to do and men to do the work. But this will not come about in your time or mine. Because people don't rush to physicians for headaches, colds and constipation, some people believe that the rush to physicians has stopped. It has stopped, for that kind of physicians. But a better public intelligence will mean more medical work and more pay to the medical men doing high-grade work.

Perhaps the most illuminating way to look at the matter is to see what effect state education has had on educators. A physician is prone to let his irritation over the loss of a case of contagious disease through enforced hospitalization make him forget the many ways in which that policy, broadly applied, has inured to his benefit. Let us try for a broader view by seeing what has been the effect of enforced state education on teachers. The people are now practically universally educated. The work is done with regard for the broader economies. The number of teachers has multiplied many fold. The pay of teachers has increased; the old academies and private schools and private teachers have nearly all come to an end, but colleges, universities, high schools and grammar schools have replaced them several times over. Is it not reasonable to suppose that the impending and quite inevitable changes in medicine will mean people in better physical condition, work done more economically, more doctors, and especially better doctors?

What is the outlook for better service? One out of every twelve babies dies from birth accident. There should be no deaths from birth accidents. What a field for competent obstetricians! One out of every four babies dies from intestinal disease. None of the babies born on the boulevards or in the better residence districts dies from intestinal disease. What a field for pediatricians! Proper supervision through life prevents the development of heart and kidney disease. What a field for the alert family physician! There is a stage in every case of consumption in which the disease is certainly curable in three months. What a field for the alert internist!

Not one-tenth of the tonsils which should be removed are being removed. What a field for the laryngologist! A large part of our people are working at low efficiency by reason of poor sight. What a field for the ophthalmologist!

The orthopedist and the surgeon could increase the working capacity of a large part of the people if they could get at them. Probably there are not enough surgeons to do all the surgery demanded by considerations of the greatest efficiency, comfort and happiness. And certainly there are not enough dentists to do all the needed dentistry.

These views do not go far into the future. They are right at hand.

I hope I have said enough to prove that nothing is gained by the medical profession by opposing the inevitable—that there is the brightest of futures for the profession and for the individual physicians who recognize the inevitable and properly adjust their methods, their labors and their point of view so as to make the largest use of it.

CONCLUSIONS

1. The best interests of medical men demand that they adapt themselves to the inevitable evolutions in their work and in that of health-governing bodies.

2. The physicians should always take the leadership in health movements in their communities.

3. To offset unnatural prejudices, a campaign to demonstrate that this leadership has broad and altruistic motives must be maintained and all right-thinking people must be brought together in support of the great work of physical welfare.

4. This Section must be so enlarged as to affiliate with it associations of health officers, Young Men's and Young Women's Christian Associations, sociologists, sanitary engineers, school examiners, those interested in child hygiene, infant welfare, milk commissions and tuberculosis associations, ventilating engineers, housing students and school teachers' associations: in a word, all of those bodies that are working for physical welfare. A working plan for cooperation with these should be worked out by this Section of the American Medical Association, so as to prevent duplication.

5. Subsections for some of these should be established in this Section. The constitution and by-laws of the American Medical Association should be so amended as to include such workers for physical welfare as choose to come in.

6. Every county medical society should inaugurate sections to take up different divisions of welfare work and should give modified membership in their societies to all local workers for physical welfare.

7. There should be a health journal or health newspaper maintained by this Association for the purposes of public education on physical welfare.

8. This Section must work closely with the Council on Hygiene and Public Instruction, directing it and receiving direction from it.

Imbeciles as Potential Criminals.—G. A. Auden quotes Fernald (*Jour. Crim. Law and Criminology*) as saying that it cannot be too strongly impressed on our notice that every imbecile, especially the high-grade imbecile, is a potential criminal, needing the proper environment and opportunities for the development and expression of his criminal tendencies. The life history of the imbecile put under permanent protection and training at an early age is very different from that of the feeble-minded who grow up at large in a modern urban community. Nearly all of the imbeciles trained from childhood or youth may be taught habits of industry and comparatively good behavior, and a large proportion of them settle down to a condition of inhibition of the antisocial traits, and indeed to a condition of ostentatious pride in the virtues which they unwillingly practice.

SOME DIFFICULTIES ENCOUNTERED IN THE THERAPEUTIC USE OF TUBERCULIN *

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That the intelligent employment of tuberculin in the treatment of tuberculosis is attended with excellent results, is now almost universally admitted. To be sure, there are still some who are unconvinced. Absolute unanimity of opinion, however, has rarely been attained in medicine, and we are not expecting it in this instance.

Tuberculin is by no means an easy remedy to administer. It requires much careful study and close observation to be able to use it to best advantage. The proper administration requires the giving of the right dose at the right time. To administer the right dose at the right time requires judgment born of experience; for it cannot be determined by rule. Tuberculin treatment is not what it is often supposed to be: merely the introduction of a certain number of drops of a certain dilution of tuberculin into the body tissues by means of a hypodermic syringe, and repeating it at certain intervals according to rule. If this is all there is in tuberculin treatment it might as well be turned over to a nurse or to the patient for self-administration.

Tuberculin can produce a varying degree of good results, also a varying degree of harmful results, according to the method of its administration. Its proper administration can be carried out only when the physician has an intelligent idea of the nature of the remedy and its action and when he has made a careful study of tuberculosis, both as to its clinical course and its pathology. This should be self-evident; yet it is disregarded in practice, if we are to judge from the manner in which it is often employed to-day. It is often administered as though it were an indifferent remedy and as though tuberculosis were a disease of no seriousness.

The dosage of tuberculin is modified by many influences, such as individual susceptibility, the character and location of the lesion, whether it is extensive or circumscribed, active or quiescent, according to the conditions under which the patient is being treated, whether in an institution or in ambulatory practice; whether he is resting or working; according to the accompanying complications and conditions, such as colds, influenza, bronchitis, hemorrhage, menstruation; also according to the preparation employed. There can be no set rule. The man who understands this remedy individualizes and aims at the production of results. He forgets stated intervals, and rules for increase of dosage and is guided entirely by the effect obtained. A hypodermic syringe filled with tuberculin cannot cure tuberculosis. It requires an intelligent brain to guide it.

Having had the honor of being one of the pioneers in the therapeutic employment of tuberculin and for several years having been one of the largest users of it in our profession, I have been consulted personally by many physicians, and others have written me for instructions how to use it and have related their difficulties and asked my aid in overcoming them. From my own experience and from the experience of these physicians, I hope I may be able to steer others clear of some of the difficulties that are encountered in this line of therapy.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

Unfortunately, those who use tuberculin most intelligently are divided into two camps, those who believe in using progressively larger and larger doses, suiting the dose to the patient and the pathologic process, and spacing the dose according to its size and the conditions present; and those who believe in the repeated small doses given at stated intervals. Between these two camps there are many stragglers who, without any particular ideas, are following no rule, but simply injecting tuberculin and trusting to the Lord to take care of the patient.

I have given both the repeated small doses and increasingly large doses a fair trial and found that I can, in most instances, produce best results by the progressively increasing dosage; and, this is what we should expect from a theoretical consideration of the action of the remedy. Tuberculin produces its beneficial effects in two ways; first, by stimulating the machinery of immunization to the production of more antibodies; and second, by causing a local hyperemia about the focus of infection which enables the antibodies to be applied more directly to the bacilli and which also stimulates the cells to the formation of fibrous tissue about the diseased foci. Examinations of the blood show that the agglutinins and other antibodies are produced in greater amounts after the larger doses although both large and small doses will increase the immune content of the blood. The treatment of local tuberculous ulcers shows that repeated small doses fail to produce hyperemia and that the progressively larger doses are necessary in order to maintain it about the focus of infection. Experience also shows that a condition of hypersensibility is more apt to occur when the small dose, administered at infrequent intervals, is employed. This is a very unfortunate condition from the standpoint of therapy and one which makes further use of tuberculin very difficult.

Whether or not hypersensibility will develop depends very largely, according to my observations, on getting the patient started right. It is a well-established principle in experimental immunization that small doses of protein cause a hypersensibility to further doses of the same protein, while larger doses cause an immunity to it. The time between doses is also an important factor. The space of time between the first few doses of tuberculin should not be long. Many men, who are unaware of these principles, in their attempt to be extremely cautious, give an initial minute dose and then delay for a number of days before giving another. This is not conservatism, it is error; and it shows a failure to comprehend the principles of immunity. The only conservatism in tuberculin therapy is the employment of the proper dose both as to size and time. No matter what preparation I use, I begin with a dose that I feel will not produce symptoms. This dose is determined by the condition of the patient and the nature of the lesion. I use a smaller dose in an active case than in a quiescent one, and in an early case than an advanced one. I also use a smaller dose in a young child than I do in an adult; in a nervous patient than in a phlegmatic patient; also when the infection involves a delicate organ such as the eye in contrast with the involvement in the lung. After the initial dose has been given I proceed with short intervals between doses, one day usually between the first and second, and one or two days between the second and third and two or three between the third and fourth, according to the patient, the lesion, the effect of the preceding dose and the preparation employed. I increase the dose rapidly, making each successive dose two, five or ten times the preceding one, according to the remedy and conditions present, until four or five doses have been given. After that I am guided entirely by my opinion of the case and the manner in which the patient reacts to the remedy. This method has proved very satisfactory inasmuch as it almost guarantees freedom from hypersensibility and troublesome reactions. I have not had a case of pronounced hypersensibility develop among my patients for the past four years. With my method of further carrying on the treatment, which consists in making each successive dose depend on the action of the preceding one, a temperature reaction of more than a fraction of a degree is almost unknown in my practice. Each dose of tuberculin is followed by what might be called a period of increased immunity or decreased sensibility to the remedy. The length of this period varies according to the dose employed; and the time of its appearance depends on the size of the dose, appearing later and lasting longer after large doses than after small ones. Within this period it is safe to repeat or increase the dose. Earlier will almost surely produce a reaction and later is apt to do so, especially if the dose is increased. An appreciation of this fact will greatly facilitate the employment of tuberculin.

The length of time that a patient should be treated with large doses of tuberculin is a very important question. After a large dose has been attained should this dose be repeated time after time? I am of the opinion that, as a rule, it should not. I am guided in this, however, by the character of the process. I use repeated large doses for a time in incipient or chronic inactive cases; but rarely in active, especially chronic active ones. I have found it best to have at my command several preparations of tuberculin. I usually run up to a high dosage on one and then drop back to the initial dose of another preparation and gradually work up again. This method has several advantages which commend it. In the first place, different preparations act somewhat differently and it is well to give the patient the benefit of their different actions. Again—and this I deem very important—it is not well to keep up a maximum focal stimulation such as is caused by the larger doses, for a long time. It has been shown, as mentioned above, that both large and small doses stimulate the machinery of immunization to the formation of antibodies; and that the larger doses cause the more pronounced focal reactions. Therefore, I deem it wise to carry my patient up to a large dose, and then if the case is an incipient one or a chronic inactive one, repeat it several times before changing to another preparation; but, if it is an active case, especially a chronic active one, not to repeat it, or at least not more than once or twice. The term "large dose" must be considered relative. A large dose for one patient is a small dose for another. I mean by a large dose, the one which my judgment tells me is large for the given patient, although I have never found it necessary to exceed the limit of dosage as usually laid down for the various preparations.

One of the greatest difficulties in the therapeutic administration of tuberculin, granting that one understands the pathology of tuberculosis, the nature and theory of the action of tuberculin and is capable of making a fairly accurate examination of the chest, is to be able to intelligently interpret the temperature curve of the patient. There are varied causes for the general temperature curves and so many factors which enter into the daily variations in the curve that one is often at a complete loss to interpret them. It is essential to know first that the curve of the tuberculous temperature

is not uniform. It runs in waves. It is up for a time and then down for a time until the patient finally attains an arrest in the activity of the disease. It shows this same character whether the patient is taking tuberculin or not. The curve is modified by physical exertion, the mental state of the patient, the condition of the digestive system, atmospheric changes, complications and many other conditions. Unless this is understood it is impossible to carry out tuberculin treatment intelligently except in cases absolutely free from fever. Some physicians take each of these rises in temperature for auto-inoculations; others think that every time the temperature rises it is due to the tuberculin used therapeutically. Such interpretations prevent the proper administration of tuberculin and are based on error. It is necessary to be cautious, but unless one is careful to inquire into the causes of these temporary variations in the temperature curve and to assign to them their rightful causes, or at least not to allow them to interfere with the proper increase and spacing of dosage, no progress can be made at all in the therapeutic application of tuberculin to a given patient. Patients are sure to have rises in temperature every now and then from some of the innumerable causes mentioned above. When doses of tuberculin are being given every second to fifth or sixth day, the probabilities are that some of these rises will come on the day of the dose. It is most natural, under the circumstances, to interpret them wrongly as being caused by the remedy. Unless one recognizes this probability and uses care in his interpretation, he cannot use tuberculin to advantage. I am positive that in our endeavor to be cautious we often ascribe to tuberculin many rises in temperature that are not due to it at all.

This brings us to the discussion of the question as to whether or not tuberculin should be used therapeutically when fever is present. My extended experience in the use of the remedy permits me to say that tuberculin is of decided advantage to the patient suffering from fever. I am not unmindful of the fact, however, that fever patients are extremely difficult to treat and that they should not be treated except by those who are thoroughly conversant with tuberculin and its therapeutic employment. The variations in the temperature curve of fever patients are much more difficult to interpret than those in the usual non-febrile patients.

The action of tuberculin is to increase the patient's immune bodies and to favor healing by causing a local hyperemia about the focus of infection as mentioned above. Tuberculosis has a constant tendency to spread; in fact, this is the factor about it which destroys the patient. At no time is it more apt to spread than when the patient is suffering from fever, when activity is present and the tissues are breaking down. If there is ever a time when the tissues should be fortified and the body fluids should be surcharged with antibodies in order to save the patient, it is while this is occurring.

The objections raised against its use during fever are not well founded. They are based on a supposition that the fever is an indication that tuberculin is already circulating in the tissues in large amounts; but this is not true. As mentioned elsewhere,[1] if it were true, all local tuberculous ulcers would show constant reaction during fever, which they do not; and as a result of the constant focal reaction the tissues would break down and we should have a generalized softening of all tuberculous foci whenever a chronic temperature exists, which also does not occur. Further evidence of the fact that the body is not surcharged with tuberculin is afforded by the observation that visible tuberculous foci which do not show reactions even when fever is present can be made to react promptly by the administration of tuberculin.

Thus we see that the necessity for the administration of tuberculin is even greater when fever is present than when it is not present; and that the supposed argument which has been put forth as a contra-indication is not valid. To be sure, skill is required to treat patients with fever; but it is certainly gratifying to see portions of lungs clear and tuberculous complications improve while the fever is present; and see these patients come out of a siege of fever which has lasted for weeks or even months without the disease having spread to new tissues and with tissues which have been primarily involved cleared up. The disappointments in the results of tuberculin treatment which I have heard expressed by physicians seem to be due to three causes: faulty technic, a failure to recognize the limitations of tuberculin, and an inability to observe the beneficial changes which the remedy produces with sufficient accuracy.

I have already discussed the more important errors in technic although I have not mentioned the many little details such as those connected with making dilutions, cleansing the syringe, measuring out the dose, and administering it, that contribute so much to successful therapy, and which, when disregarded, mean almost certain failure. These, while very important, are too elementary for discussion at this time.

It is as important to know what a remedy cannot do as to know what it can do. If the limitations of tuberculin were thoroughly understood much disappointment would be avoided. That tuberculosis, after it extends beyond the initial stage, is always a complex condition, should always be borne in mind.

Tuberculin has only a specific action against the tubercle bacillus and its toxins. It cannot cure mixed infection nor can it prevent the deleterious effects resulting from enzymes and the products of their action. It can aid in the healing of tuberculosis; but it cannot be expected to exert a specific action on necrotic tissue. It cannot cure consumption although it can aid in curing the more recent lesions even in advanced cases, and it can aid in keeping the blood reinforced with antibodies, thus helping to prevent the disease from spreading. It cannot restore tissue when once destroyed, nor can it overcome the effects produced by the disease. Yet all of these impossible things seem to be expected of it.

Much of the value of tuberculin cannot be observed. We cannot see its action in stimulating the machinery of immunization and protecting the body from new infections occurring from the bacilli which escape from old foci. Unless examinations are made far more carefully than usual we cannot determine the healing of the areas of slighter infections in the lung. The changes are slow, as can readily be seen by the fact that it requires on an average six months for an early case of tuberculosis to heal. Only the most careful expert examinations can determine the changes which occur from month to month. Unfortunately few men have been schooled in making examinations with sufficient accuracy to be able to determine this; consequently, it is necessary in the treatment of this disease to take a great deal by faith. Physicians must not expect great changes to occur in a short time, but must be patient and remember that the changes which would occur in an ordinary acute illness in a few days or few weeks require many weeks or many months in this disease.

1. Pottenger, F. M.: A Study of Fever in Tuberculosis, with Reference to Its Causation and Treatment, THE JOURNAL A. M. A., 1911; yet to be published.

ABSTRACT OF DISCUSSION

DR. WALTER BREM, Los Angeles: Von Pirquet in his recent article on "Allergy" in the *Archives of Internal Medicine* has discussed the subject of reactivity to tuberculin; he thinks that altered reactivity of the tissues to tuberculin is due to the presence of antibodies, which so act on tuberculin as to convert it into a toxic body. When an apparent tolerance for tuberculin is developed by the administration of gradually increased doses, von Pirquet thinks that what takes place is a decrease in the number of antibodies. If that view is correct, I think that one should be very careful how one creates this apparent tolerance for tuberculin, and that it would be desirable to graduate therapeutic doses according to the degree of reactivity so that the reactivity would not be altered by a decrease of the naturally developed antibodies. White of Pittsburgh has introduced a method of graduating doses of tuberculin by which he thinks that he can avoid altering naturally developed reactivity. He finds first the quantity of tuberculin that in the cutaneous test will produce a "minimal reaction," a papule 4 to 6 mm. in diameter, and then he injects that quantity subcutaneously. If, for example, .01 c.c. of a 1 per cent. solution (O. T.) produces a papule 4 mm. in diameter, then he uses an equal quantity, 0.1 mg., for the subcutaneous dose. By using a careful technic in his cutaneous test he finds a definite quantitative relation between the skin reaction and the reactivity when tested subcutaneously. A dose producing in the cutaneous test a papule 4 mm. in diameter will, when given subcutaneously, produce an area of redness 4 to 6 cm. in diameter, and such a dose never produces any general reaction. Furthermore, if the doses are spaced ten days apart no alteration of the naturally acquired reactivity is brought about. White's method is interesting in connection with the theoretical considerations of von Pirquet. The object aimed at by White is logical if von Pirquet's ideas are correct. In view of this and also in view of the fact that White has reported excellent results from the use of his method, it seems to me that the method is worthy of careful trial.

DR. JOHN RITTER, Chicago: Using tuberculin daily in practice in ambulatory cases I am very much impressed with what Dr. Pottenger has told us just now and feel assured that tuberculin finds its best application in the sanatorium. Ambulatory cases will not give such good results. Tuberculin is a double-edged sword. Tuberculin should only be used by those who are familiar with it. The more I use tuberculin the more I am convinced that it should be used in the sanatorium and only to a limited extent in ambulatory cases. One cannot watch ambulatory patients as closely as those in a sanatorium. The average physician looks on tuberculin as a specific. Tuberculin is a specific only in effect. It is not a specific in the degree that mercury is a specific in syphilis, but we get definite results in tuberculosis with tuberculin. It is not a curative measure, it only assists us in the cure of tuberculosis. This paper by Dr. Pottenger should be taken home and read again and again and then tuberculin should be used only when the practitioner is familiar with the cases, or he should send them to a sanatarium where they will be under careful observation at all times.

DR. EDWARD VON ADELUNG, Oakland, Cal.: Probably our principal interest centers on the question which covers the whole discussion, namely, Is tuberculin of value at all? We all know that some people do not feel that tuberculin is of any value, but I hasten to add that I am on Dr. Pottenger's side in feeling that tuberculin is a valuable addition to the usual hygienic, dietetic and climatic treatment of this disease. There was a time when I was in doubt. I was convinced only by clinical evidence, not by theoretical explanations. By clinical experience I do not refer alone to my own experience, which was of some satisfaction, but to the reports of men like Bonney, Trudeau, Baldwin, Pottenger and a number of men on the other side of the Atlantic, who stated that they had given patients the benefit of all treatment without tuberculin, had seen them attain a stationary degree of improvement and had then found that by giving tuberculin in addition, further improvement was obtained. This to my mind was convincing. We are pretty well convinced that when we cure tuberculosis we do it through cell resistance to the bacillus and its toxins. Hygiene and diet do it in that way. Tuberculin acts in the same way. In our attempt to measure the action of tuberculin we seized on Wright's demonstration as a gauge; but we found it to be inadequate. We have fallen back on the clinical valuation and we still rely on this method of gauging our treatment. We cannot state with mathematical accuracy the proper dosage or the number of days between doses. But as well pointed out by Dr. Pottenger these are matters of individualization and cannot be argued out. I should congratulate Dr. Pottenger when he says that he no longer—or exceedingly rarely—gets reactions. Here our experiences have differed somewhat. I find from what he says to-day that I am using tuberculin in practically the same way as he is, except that I try to find the maximum dose of tuberculin that I can give to each individual at fixed intervals of time, the theory being that I am using a stimulant to tissue resistance, just as we use strychnin, or digitalis, or atropin in appropriate conditions, realizing that we use these stimulants within their physiologic limits. And so I have been using tuberculin to the physiologic limit. I sometimes get a reaction; rarely a reaction of any importance; usually very slight. Then I know that I have reached, at least for some weeks, my limit of dosage for that patient. I have also found, as has Dr. Pottenger, that a change of brand of tuberculin is of value, the stimulation on changing is noticeable. The use of tuberculin during fever is a field that I have not trodden on. I have usually regarded a continued fever in tuberculosis as the result of a toxin and supposedly the toxin from the tubercle bacillus, or tuberculin, and hence contra-indicating the use of tuberculin. I do recall now one patient with fever, who appeared to me to be fully saturated with toxin, whom I agreed to treat with tuberculin only at his pleading—an indigent who had been sent to the county hospital and came back and begged me, in a moribund condition, as I thought, to give him tuberculin. I did. His is one case which has opened my eyes to the fact that many hopeless-appearing patients can be helped. This man improved in many ways, including weight, appetite and strength and is now walking about the streets and earning a living. He had no treatment other than hygienic and dietetic, except the addition of tuberculin. I presume that bears out the contention that tuberculin has its use in fever conditions.

DR. W. C. VOORSANGER, San Francisco: I would like Dr. Pottenger to explain his position on the prophylaxis of tuberculosis and how far it may be effected by tuberculin therapy, i. e., tuberculin injections. By that I mean that, supposing a case of tuberculosis in the prebacillary stage, if you like, or supposing a case in which we only have the bronchial glands tuberculous—a glandular tuberculosis in which there are no actual symptoms—I would like to know exactly his position in the administration of tuberculin in these cases and how long he would give tuberculin and at what stage he would stop. In regard to the injection of tuberculin, I believe that the great difficulty which most people experience is that they are looking for an immediate, definite result and I do not believe it can be had. When one administers digitalis in a case of cardiac trouble, if the pulse is about normal and the patient about well, one does not go on administering digitalis two or three years longer. If the patient has another break in compensation, one administers digitalis again. I believe one should look for the symptomatic result. Dr. von Adelung spoke of using tuberculin up to its physiologic dose. I do not exactly understand what is meant by that. I do not believe we should use tuberculin any further than the patient can tolerate it, and that when we receive a symptomatic result from a dose, and the patient is doing well, then that dose should be maximum. I do not believe the same maximum dose for every patient is possible. In starting I use 1/20,000 mg. of bovine tuberculin. I always start with that and I have no maximum. When, after several months, a patient is doing well on a certain dose, this should be the maximum dose. I never could see any reason for increasing a dose to a definite maximum. I believe that each patient should have a different maximum. When the patient reaches the point where he can tolerate a certain dose of tuberculin, and do well, that should

be the place to stop. In other words, one must individualize with tuberculous patients in the same manner as with patients afflicted with any other disease.

DR. CHARLES O. PROBST, Columbus, O.: I wish to emphasize the danger of improper use of tuberculin. A large producer of tuberculin, a physician, a skilled bacteriologist, a tuberculous subject who has taken tuberculin in its treatment, told me that it was with a great deal of trepidation that he placed it on the general market. He feared that if used widely it might do more harm than good. For the average physician, and especially those who have not had laboratory training, the mere making up of dilutions is a matter of difficulty. To meet that the producers are sending out doses in serials to be taken so many days apart. If what Dr. Pottenger tells us is correct as to the great care needed in the administration of tuberculin, I can see some danger in putting up tuberculin in that shape for the use of the general practitioner.

DR. MAX ROTHSCHILD, San Francisco: The necessity of individualizing in every case is undoubtedly of the greatest importance and I am in harmony with Dr. Hare in condemning the houses which put tuberculin on the market in serial dilutions and induce the general practitioner to treat tuberculosis according to a schedule. In regard to the treatment of fever I must say that I take a different standpoint from Dr. Pottenger. Before I try to give my patients, who have fever, tuberculin, I always put them to bed for at least four to six weeks and see if the fever does not go down with absolute rest in bed. It usually does and I have found that if the fever does not disappear with the absolute rest in bed after four to six weeks it very rarely disappears under the tuberculin treatment. The question whether it is always better to send patients with tuberculosis to sanatoriums is difficult to decide, and a very important one. There is no doubt that the patient who can afford it should go to a sanatorium, but there are hundreds of poor patients who haven't the money to do this, and the public institutions for the special treatment of tuberculosis are so few that only a small number of the tuberculous poor can be accommodated. Now, what is going to become of these? Are they going to be deprived of a treatment which most of us consider a very important one, and one which might save their lives? In a paper which I read about a year ago in Nevada, at the state medical meeting, I took up this point. I believe that every practitioner should learn how to use tuberculin. A good physician knows how to treat a difficult case of pneumonia and he knows how to treat a difficult case of typhoid fever. These diseases, like many others, need a good deal of knowledge and circumspection in order to be treated properly and successfully. Now, why should a general practitioner, who knows how to treat such other diseases well and correctly, not learn how to use tuberculin? It should be made a part of the physician's education, so many a poor tuberculous patient could be properly treated and perhaps saved, whose circumstances would make it otherwise impossible for him to receive the benefits of the tuberculin treatment in a sanatorium.

DR. J. S. TREWHELLA, Los Angeles: Should we simply increase the dose of tuberculin until we get the reaction? What are the symptoms from a minimum reaction?

DR. J. E. POTTENGER, Monrovia, Cal.: I would like to speak of the possible value of the laboratory in aiding in the interpretation of temperature. As there is always more or less intoxication from stomach and bowel disturbance in these cases its detection by laboratory methods may aid in the interpretation of the temperature curve.

Recently I had two patients one of whom, with a very irregular temperature, was known to have considerable disturbance of this kind. The other was undergoing an acute extension of the disease in the lung, with atypical temperature. From daily twenty-four-hour quantities of urine the indican was determined quantitatively. From twenty-four-hour specimens of sputum the total amount of solid material was determined. White blood-counts were made each day. In the first case I found that the maximum indican elimination corresponded fairly with the rise in temperature, while the blood-counts and solid matter in the sputum remained approximately the same. In the second case there was a pronounced increase in the amount of solid matter in the sputum, while the indican and white blood-cells remained practically the same. The conclusion was that in the first case we were dealing largely with an atypical temperature due to intestinal intoxication. Such data may aid in clearing up doubt as to the effects of our tuberculin inoculations.

DR. MAZYCK P. RAVENEL, Madison, Wis.: While agreeing heartily with what Dr. Probst has said, I wish to put in a plea for the commercial houses that put out those serial dilutions of tuberculin. We all recognize the dangers of careless or faulty dosage, and these houses are giving to the physician accurately measured doses. Dr. Lawrason Brown, who has had about the largest experience in the United States, has published a table of dilutions, and only the other day Dr. Kress of Los Angeles published a similar table in THE JOURNAL of the American Medical Association (April 29, 1911). I presume there are very few men in the United States who have made more tuberculin than myself, and yet to this day I never make dilutions without realizing that I have an exacting and difficult job on hand. Those firms that are putting out the serial dilutions are putting into the hands of the general practitioner the proper dosage, properly prepared and in an absolutely safe way.

The man who does not know when he is giving the wrong dose and does not recognize hypersensibility, has no business fooling with tuberculin at all. To condemn tuberculin because some men give it wrongly is as unfair as to condemn strychnin and morphin because poisonous doses are sometimes given.

DR. ROBERT A. PEERS, Colfax, Cal.: Serial dilutions commence with too high a dose. No. 1 in all serial dilutions contains 0.01 part to the cubic centimeter; the commencing dose should be 0.001. I have had prepared three dilutions, one in which there is 0.001 to a cubic centimeter, one in which there is 0.0001 and one in which there is 0.00001 to the cubic centimeter, and then I commence either with a 0.00001 mg., which would be a tenth of 0.0001, or else I give 0.000001 as the commencing dose. I believe there are some who start with smaller doses than that, but I think it is wrong for anyone who is using tuberculin to commence in all cases with serial dilution No. 1, because they will find that they will get a great many reactions. I am not sure that I understood completely Dr. Pottenger's attitude in regard to the administration of tuberculin in patients with fever. For two years I have not been giving tuberculin to patients with elevated temperature, except in rare instances. I do not believe that any man should advocate the use of tuberculin in patients with a temperature above 100 F. In patients who are running a temperature of between 99 and 100 F. I think there is good ground for its use in so far as we know about tuberculin. I believe we know very little about tuberculin yet. I believe very much in the use of tuberculin. If I had tuberculosis myself and was not running a temperature I would want tuberculin used and I would want somebody to use it who had experience in it. Perhaps Dr. Pottenger does not advocate it in temperatures above 100 F.; but if he does advocate it he cannot impress too strongly on the members of the profession that they must use the greatest caution in using it.

DR. GERALD B. WEBB, Colorado Springs, Colo.: I am a great believer in the value of tuberculin. I perhaps use smaller amounts. While listening to this discussion I wondered if Bernard Shaw had been present at a similar one before writing his "Doctor's Dilemma." Before antitoxin was introduced the treatment of diphtheria covered many pages in the text-books. It is evident from the discussions that we have no specific yet for tuberculosis. Tuberculin, after all, is a preparation of dead germs and little immunity can be obtained in tuberculosis without the use of the living germ. At the International Congress on Tuberculosis, 1908, I suggested a method of inoculating the living germ. I have had some fifty volunteers up to date. I have done no harm and I have felt the results were better than with tuberculin. I have fully satisfied myself as to its safety on guinea-pigs, rabbits and monkeys. The inoculation of the living germ frequently brings down the temperature, as Dr. Pottenger has found with tuberculin. Practically the whole human race becomes infected with the tubercle bacilli and I believe we can prevent this infection to a large

degree by the inoculation of the living tubercle bacillus. We have been able to inoculate young monkeys with safety with enough virulent human tubercle bacilli to kill 20,000 guinea-pigs. By this method I have already safely inoculated two children.

DR. F. M. POTTENGER, Monrovia, Cal.: According to von Pirquet, as suggested by Dr. Brem, when large doses of tuberculin are administered, the antibodies should all be used up and the skin test should prove negative. I have tested numbers of patients who were receiving large doses of tuberculin and they reacted positively without exception. We must not let theory take the place of clinical observation. Whoever administers tuberculin should know the definite quantity of tuberculin in each dose, instead of so many drops of such and such a dilution. No man has any more right to undertake the use of tuberculin without first studying tuberculin and tuberculosis than he has to do major surgery without first studying his anatomy and witnessing operations. While the sanatorium offers the best conditions for the use of tuberculin, I do not agree with Dr. Ritter that it should be used only in sanatoriums. I treat many poor people in my city offices, who are compelled to work while getting well. My results are not so good as those in the sanatorium and the time of treatment is greatly prolonged, yet I am saving many patients who could otherwise not be saved. Those who are using tuberculin intelligently and not expecting it to remove all the results of consumption, put in new lungs, remove cavities and restore hearts and stomachs that have been injured, but who are expecting it to fortify the body against the spread of the disease and help rid the body of pure tuberculous foci; those who are administering it, not by so many drops of this or that dilution once a week, or once in two weeks, regardless of the condition of the patient, but by giving the right dose at the right time, are unanimous in their opinion that tuberculin is of value. The cure of tuberculosis depends on specific stimulation, on the one hand, and the reaction of the body cells on the other; consequently tuberculin should be reinforced by every known measure that will build up the patient and improve his resisting power. Clinical observations are ample for measuring dosage. The early signs of reaction will be detected long before the point of fever reaction is reached. Nervousness, depression, malaise, aching, increased cough and expectoration, nearly always occur on doses short of those which will produce fever. I would not recommend the wholesale use of tuberculin in fever by any means, but I would recommend that those who know tuberculosis and who understand fully the use of tuberculin, try it in fever cases.

Regarding the treatment of tuberculosis before the bacillary stage, as suggested by Dr. Voorsanger, I believe the future cure of tuberculosis is going to be the treatment of infected children. It is wrong to allow these early unhealed infections to become clinical tuberculosis.

As has been suggested I am of the opinion that there should be some man in every community who is capable of using tuberculin in the treatment of tuberculosis. The men who only have one or two patients a year to treat should not think of employing it. They do not have sufficient experience to use it correctly.

My experience with fever cases is different from Dr. Rothschild's. Unfortunately I do not find that the temperature is reduced in five or six weeks. The pathology of these cases makes it impossible for the fever to be of short duration. Very often I find that I can hasten the fall in temperature by tuberculin.

I congratulate Dr. Webb on his most valuable and interesting contribution on immunity in tuberculosis. To my mind he has struck the natural process that goes on in the child from the time of his birth.

Epilepsy.—Celsus, in describing epilepsy, used a term which became immortal. He called it "morbus major." The French translated this into their own inimitable language and gave a name which is to-day the common description of the condition *grand mal*, because the disease was terrifying and great and grand.—E. L. Hunt in *Medical Record*.

THE PRODUCTION OF IMMUNITY IN TUBERCULOSIS BY INTRAVENOUS INJECTIONS OF TUBERCULIN*

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In the treatment of no other disease have there been such strides made in the past few years as in that of tuberculosis. From time immemorial this disease has attracted the best attention of the medical profession, and various have been the remedies and measures proposed for the alleviation and cure of the great white plague, which at the present time is depopulating this good old world of ours at the rate of 1,000,000 a year, and causing a loss to the nation of many millions in money.

Immunity against any disease is based on the fact that the body in the presence of infection and its products has the power to elaborate specific substances—antibodies—that neutralize the toxic microbic product, and promote the destruction of the infectious organisms. We are all familiar with the natural immunity produced after certain diseases, such as small-pox, scarlet fever, yellow fever, cholera, and so on. Metchnikoff says that the persistence of immunity that develops after infectious diseases is due to a permanent increase in the phagocytic power of leukocytes. According to Ehrlich's side-chain theory, which has been adopted as the best explanation of the manner in which immunity and the changes in the cells are produced, toxins are harmful only when they are able to unite chemically with certain cellular bodies—receptors; otherwise the cells are immune to the action of the toxins; that is, when this union cannot take place.

Antibodies in the blood are protective and curative because they unite with the haptophore group of the toxic molecule, and thus prevent the latter from uniting with cells and causing morbid changes in structures and functions (Ludvig Hektoen).[1] The great majority of mankind must have in some degree a natural immunity against tuberculosis. If it were not so the race would long ago have become extinct, for statistics show that 20 per cent. of all adults die of this disease, and 70 to 90 per cent. of all autopsies show evidences of healed or healing tuberculous foci. Our aim in the treatment of the disease is to reproduce this immunity in those cases in which Nature seems to have failed. When tuberculin was first put on the market by Koch it was hailed as a specific, was used in all stages of the disease and by inexperienced men, which was against his advice; with the inevitable result, as in the case of all so-called specifics, that it received a set-back that will take years to overcome. Owing to the careful investigations and experiments of some of the ablest members of our profession, interest has been revived in tuberculin therapy, and at the present time it is receiving a great deal of attention as an aid in the production of immunity in tuberculosis.

Judging from the results obtained up to the present time, there is apparently little difference between the actions of the various tuberculins when properly given, as all probably contain the specific proteid, the chemistry of which is still unknown. Some observers report beneficial results with the Old Tuberculin, some with the Bacillen Emulsion, and others with the watery ex-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Hektoen, Ludvig: General Principles of Serum Therapy in Practical Treatment by Musser and Kelly.

tract. As Trudeau of Saranac Lake has pointed out, it is not the kind of tuberculin that counts, as much as it is the physician giving it; therefore the personal equation of the physician becomes a highly important factor. Sahli lays proper stress on this point when he says: "The qualifications of the physician who administers it are certainly of more importance in most cases than the kind of tuberculin."

The outcome of all the work done so far along these lines has been to establish the fact that tuberculins and their products are valuable aids in the production of immunity in tuberculous lesions. The earlier investigators attributed the curative action of tuberculin to the formation of agglutinins, and similar protective substances, by the cells of the tuberculous when stimulated by tuberculin.

Von Pirquet[2] states that the tuberculin reaction is dependent on the presence of antibodies. In a person who has no antibodies no reaction can be elicited; therefore normal individuals do not react. Neither do individuals in advanced stages of tuberculosis, for the reason that their antibodies have been used up in the fight of the body against the disease.

Hamburger[3] points out that tuberculosis is acquired almost wholly in infancy and early childhood, and that, therefore, adults either are suffering from tuberculosis acquired in early childhood or possess a latent focus which renders them immune to a further infection. The prophylactic employment of tuberculin in infancy and childhood, therefore, should constitute one of its most valuable uses, considering the fearful death-roll caused by this disease among the little ones.

Maragliano[4] says that "Tubercle bacilli, living or dead, are able by their toxins to produce in the organism, specific protective bodies, antitoxins, lysins, bacteriolytic substances and agglutinins. The production of these protective bodies can be brought about by the introduction of tuberculin into the patient."

Trudeau says: "The production of tuberculin immunity is capable of favorably influencing the course of chronic tuberculosis, of prolonging life, and in many cases of aborting a commencing infection, or extinguishing the smoldering fires of a chronic infection."

Sahli (1896) believes that tuberculin is not merely a specific, but like digitalis in cardiac disease, is a functional therapeutic means, which acts in a definite way on the toxin-susceptibility of the organism. In the ordinary course of the disease, tuberculin is formed so gradually in the patient's system that the organism is rarely stimulated to the formation of any antibodies. In the tuberculin treatment a large amount is thrown into the circulation at once, and so permits the bacteriolytic properties of the tissues to exert themselves—it permits an auto-immunization to take place. Now, if the dose injected is too large, the cells are so affected, with a body already overloaded with toxins, that they can no longer respond to stimulation, and this explains the failure of many patients in advanced stages to react to tuberculin.

Leukocytosis takes place in almost every disease of bacterial origin except tuberculosis. Metchnikoff, in his work on the phagocytic action of the white cells, concluded that these bodies played the part of an armed force, ready to combat any invasion. Buchner followed with the observation that the blood-serum, exclusive of the cellular elements, could destroy disease germs. Finally Vaughan of Ann Arbor announced that by the administration of substances containing nucleinic acid, the number and activity of the leukocytes could be increased.

Having, I think, fully explained that the protective substances which cause immunity can be produced by the injection of tuberculin, and are aided by the administration of other remedies that increase leukocytosis, I shall briefly compare the various methods of administration.

The subcutaneous method is the one commonly used by the profession, and at the different sanatoriums at the present time. I cannot see that it has any advantages when compared with the intravenous method. It is slower in action, painful to the majority of patients, and is often the cause of the production of local abscesses.

The intraperitoneal method has been used by some, and Maragliano has used an intrapulmonary method with some benefit. Tuberculin has also been used by the mouth, with doubtful results, some observers stating that antitoxic serum cannot be absorbed from any intact mucous membrane, and others to the contrary, that a child can be rendered immune by feeding it the products of the tubercle bacilli. I have had no experience with these methods, having used the subcutaneous, and for the past three years, only the intravenous. Koch, Denys and Rothschild have used and advocated the intravenous method for years, but the advantages of this method over all others have not received the attention they deserve. It is absolutely painless, avoids the danger of abscess formation, allows the use of smaller doses, and gives quicker results than by any other method. It is being used in this way by Dr. Max Rothschild at the California Sanatorium at Belmont, Cal., and at the Cottage Sanatorium at Needles, and with marked success at each institution.

Ludvig Hektoen[1] says:

> **The fact that intravenous injections immediately give a far greater concentration of antibody in the blood, and hence in the lymph also, than is ever obtained by the gradual absorption from the subcutaneous tissue, is a strong point in favor of direct injection into the blood. . . . According to Berghard, the curative value of antidiphtheritic serum for guinea-pigs on direct injection into the blood, is 500 times greater than on subcutaneous injection, and so far no dangerous symptoms have developed from these intravenous injections.**

Also, further, in the same article, Hektoen, quoting Friedberger and Doermer, says: "Small quantities of bacteria may cause a greater output of specific antibody on intravenous than on subcutaneous injection."

As an experiment I took six guinea-pigs of the same age and weight that had previously been infected with the disease from the same source, gave three of them subcutaneous injections of O. T., and the other three intravenous injections of the same preparation, only lessening the dose one-third. I found that the three which received the intravenous injections reacted in from four to eight hours sooner than the three which received the subcutaneous injections. This was repeated several times with the same results. Changing the animals around, so that the three which received the intravenous injections at first, now received the subcutaneous, and *vice versa*, produced the same results, showing that I had absolute control of the reactions and proving that the intravenous method was the best way to give the remedy to get quick results. This has been further borne out by clinical results on patients.

2. Von Pirquet: Wien. klin. Wchnschr., Nov. 17, 1905.
3. Hamburger: Wien. klin. Wchnschr., July 16, 1908.
4. Maragliano: Die specifische Therapie der Tuberkulose, Tr. Internat. Cong., 1908.

The true fundamental principle, underlying all therapeutic measures in the effort to secure the arrest of the tuberculous infection, is that of conservation of strength and augmenting the inherent resisting power of the patient. The physician should study each case separately and all the time, because the susceptibility to tuberculin varies in different patients, as well as in the same patient at different times. As Hammer[5] says: "As a first condition for its harmless use, it is certainly necessary that the physician who desires to add it to his therapeutic equipment must be experienced enough to be able to judge even the slightest sign of reaction."

The most important rule to remember is that too little never injures, while too much may result in a strong reaction, which is to be avoided. Those who have made use of the subcutaneous method of administration know that at times, in spite of all precautions used, an abscess will occur, especially when the B. E. preparations are used; and everyone knows what effect this has on the mind of the patient as to the advisability of continuing the treatment. These bad effects can be avoided by using the intravenous method and, as stated before, results will be quicker.

Koch pointed out that success would be secured in the application of the treatment in the earliest stages of the disease. We go further to-day and say that the remedy should be administered before any of the ordinary symptoms of the disease manifest themselves. After three years' use of tuberculin, I can say without hesitation that treatment can be carried out in all cases, even in the most advanced, when there is reacting power, without danger. I have never seen any harm result, in spite of the fact that I have not picked my cases for treatment, but have taken them in all stages of the disease. On the contrary, I have found under the use of tuberculin a hard, irritating cough easing up, a tenacious sputum becoming thinner and easier to raise, and the appetite increasing, in cases that were hopeless for any marked improvement, and under such results it cannot be denied that the resisting power of the whole organism had been raised.

In giving tuberculin or any other preparation intravenously, great care is necessary that absolute asepsis is secured, that the solutions used are freshly made and are sterile, and that the needle and syringe are thoroughly sterilized. I prefer and use a Sub-Q Tuberculin syringe with a 27¾ gauged needle. The syringe is graduated to 100 parts and contains 1 c.c.

As to the technic of the injection, selecting as a site the veins in the hollow of the elbow, I have the patient hold the arm parallel to the body, and open and close the hand rapidly for a minute. This with the application of a rubber strap applied above the elbow by an assistant, makes the veins prominent and easy of access. Now I have the patient close the hand tightly, then I tighten the strap, wash the site thoroughly with alcohol, inject the solution slowly, and withdraw quickly, elevating the arm for a moment, loosening strap and opening hand, seal the puncture with collodion. No other dressing is required.

I use the O. T. and B. E. preparations and make my own solutions. I usually commence treatment, in a suitable case, with a dose of 1/10,000 to 1/1,000 mg. of tuberculin, drawing first into the syringe about 05 lines of the diluent, then the required amount of tuberculin, and again the diluent to about 15 or 20 lines, seeing that all air is expelled from the syringe. For a diluent I use a 15 per cent. solution of atoxyl. Care must be taken in the preparation of the atoxyl solutions, as the drug is very unstable and spoils rapidly. A yellowish color shows that chemical decomposition has taken place and the solution should be discarded; otherwise if used, there will be symptoms of arsenical poisoning. For the past year I have had it prepared for me with the addition of 4 minims of chloroform to the ounce of solution, which has the effect of preserving the solution for some time, and as I use only about 15 lines of the solution, or about ⅓ gr. of the salt, the amount of chloroform has no effect on the patient that I can see. Large amounts of phenol (carbolic acid) and its preparations are used as a preservative in antitoxin, and yet we never hear anything of its effects when used in this manner. Using small amounts of atoxyl, as I do, I have never had any of the bad results reported by others, such as atrophy of the optic nerve. I think that these deleterious effects are caused by using either too strong a solution or an impure salt. I have given thousands of injections without any bad effects. I have found that atoxyl is a powerful adjunct to tuberculin in producing phagocytosis, which is one of our aids in producing immunity. Dr. Ward of Philadelphia is advocating the intravenous use of nuclein for the same purpose in tuberculosis, and from his reports and others it looks as if we had another valuable aid at our command in the treatment of this disease. I have always relied on nuclein by the mouth in tuberculosis but have never used it intravenously. Atoxyl has been used with marked benefit in cases of pernicious anemia, and is especially lauded by Mendel of Essen.

The increase in dosage of tuberculin must be governed entirely by the signs of reaction, both local and systemic, and one reaction must have subsided before another treatment is given. Some of the symptoms of reaction are a slight rise of temperature, increased rate of the pulse and respiration, headache, aching of the limbs, increased cough and expectoration, loss of appetite, and so on. These symptoms will vary in intensity according to the case and the amount of tuberculin used. These, though they may be slight and seem insignificant, must be noted, and caution used before increasing the dose or even repeating it. As to the interval between injections, there should be a lapse of from three to seven days, depending on the case and susceptibility. The physician should individualize each patient so that he will be able to recognize any deviation from a normal condition, caused by the injection, because the recognition of the slightest sign of reaction will be his best protection against danger.

In order to secure the immunizing effect of tuberculin and its preparations it is not necessary, as we once thought, to give large enough doses to produce marked reactions, but just enough to keep below this reacting point. This will vary in each case and under different conditions in the same case, and must be watched carefully; hence the importance of individualizing. I believe in starting the patient on small doses and gradually increasing the dose until I reach the patient's tolerance. This will require from six months to two years or even longer in some cases. I have seen all symptoms disappear within three months in very early cases.

Toxin tolerance as a method of treatment has been strongly supported by Sahli, Denys and Trudeau. The former two look on toxin tolerance as the only object, while Trudeau believes that mild reactions are of bene-

5. Hammer: Value and Practicability of the Use of Tuberculin, Tr. Internat. Cong., 1908.

fit. If it is at all possible, I think it is best to avoid all marked reactions, and this can be learned by experience.

Specific action consists in the production of a congestion more or less marked out, at the site of the infection—a congestion which can be demonstrated by examination, whenever the disease is superficial in the lung, or when the larynx is affected. Recognizing this congestion enables us sometimes to diagnose latent tuberculous foci when other symptoms are absent.

It is my plan in treating patients to put them to bed for at least a week prior to taking treatment, have the temperature taken every two hours and urine and sputum examined, so that the exact condition can be determined and the subsequent injection watched with greater accuracy. If there is no rise of temperature I advise the patient to rest for a few days to secure complete relaxation, and see to a thorough flushing of the system. These precautions enable us to estimate the size of the dose which is one of the most important parts of the treatment.

I regard the opsonic index as a test of accuracy, but impractical, because when a number are taking treatment it takes up too much valuable time. The technic is too delicate and the results so often so difficult to interpret, that there is little hope of its ever proving useful in establishing an early diagnosis, or in guiding us in the treatment, when we have the clinical signs to guide us without the aid of trained observers and special apparatus, which the taking of the index requires. I think that studies and investigations made by such observers and with such apparatus are important and essential for the improvement of the practical side of the subject, as demonstrating the active and comparative value of different preparations, as well as showing us that the products of the tubercle bacillus act in a truly specific manner, by inducing active antibacterial or antitoxic immunity. In active antibacterial immunization specific amboceptors for tubercle bacilli can readily be demonstrated in the blood-serum of treated patients by the hemolytic method of Gengou.

From my own experience, and watching the results of others, I consider that we have at our command in tuberculin and its preparations, when used intravenously, powerful remedies for good when used rightly, but capable of doing much harm when used wrongfully. Until we have a better method we must consider it of the greatest importance in the treatment of the disease, to bring about a more general use of the intravenous method of administration; I feel confident that once the physician has used it in this way and has found that he can secure the best of results with small doses, less reaction, less discomfort to his patient and likewise to himself, and absence of all pain and swelling, he will never use it any other way, and will simply wonder why he had not used it so before. To secure this end it will be necessary that every physician should acquaint himself with the method of employment, the dosage and the behavior of the remedy, and it goes without saying that he should have a more thorough knowledge of the disease in the early stages than the general practitioner has to-day.

I want to report the results secured in ninety-five patients treated by me in the last three years. Of these, forty-eight were incipient cases, thirty-two moderately advanced, and fifteen far advanced. Of all these patients, 80 per cent. had cough, 78 per cent. expectoration, 38 per cent. hemorrhage, 15 per cent. pleurisy, 35 per cent. dyspnea, 75 per cent. loss of appetite, 35 per cent. night sweats, 30 per cent. hoarseness, 5 per cent. involvement of the larynx, 90 per cent. fever, and 100 per cent. loss of weight. On their discharge, classified according to the National Association, in the progressive stage, or unimproved, there were thirteen, or 86.66 per cent., in the improved stage six, in the arrested stage, physical signs stationary or retrograding for at least three months, twenty-eight, or 87.5 per cent.; in the apparently cured, signs of healed lesions for one year under the ordinary conditions of life, forty-eight, or 100 per cent.

A word as to the danger of the production of thrombosis and embolism, which has been one of the strongest arguments of the subcutaneous advocates against the intravenous method, and the stumbling-block to so many who really wanted to use the intravenous injections. I will say that in my opinion this is purely imaginary, for if proper asepsis is used and the solutions are sterile there is absolutely no danger. I have never had any such trouble, though treating patients in all stages, nor have I heard of it happening to others when the proper care was taken. It is not tuberculin alone that is going to cure patients, but it is a combination of all methods, fresh air, proper nourishing food, abundance of sunshine, regulation of the habits, tuberculins and autogenous vaccines rightly used and at the right time, by experienced men, that will bring us to the time when we can safely say that we have at last conquered the disease.

But it is incumbent on us to gird our loins, take a fresh hold, educate the general practitioner, and then the layman, to the effect that tuberculosis can be cured, urge the necessity of getting them under treatment and in proper surroundings as quickly as possible, urge on our statesmen the necessity for the erection of state sanatoriums where the people of little means can have the best of care and treatment; also for the establishing of day camps for early cases, and for the open-air schools for afflicted children, which have been tried in the eastern states with such marked success.

I must condemn the action of some physicians who place a syringe and a bottle of tuberculin in the hands of their patients for them to use on themselves. I have had several of these cases fall into my hands. As Pottenger[6] says:

> Any man should be capable of using these remedies if he has sufficient intelligence and sufficient determination to acquire a knowledge of their action and the proper method of their use, and if he will familiarize himself thoroughly with tuberculosis. It is just as rational to put the surgeon's knife in the hands of a blindfolded physician, as to put these specific remedies in the hands of a man who does not understand both them and the disease to be treated by them.

As the author was referring to physicians, what must the danger be when laymen try to use it!

Some assert that meteorological conditions may be disregarded in the treatment of tuberculosis—that the climatic factor may be ignored in all cases. This is wrong. Bonney[7] says:

> The fact that individuals recover from incipient tuberculosis without climatic change is no more to be considered as an argument against the wisdom of its intelligent application in individual cases, than is the recovery without operation of a given patient with appendicitis to be considered a reflection on the general expedience of surgical interference.

As Dr. Knight says, "If weather conditions make no difference, why do patients improve at one season more than another?" as we all know is the case.

6. Pottenger: Pulmonary Tuberculosis, 1908, p. 206.
7. Bonney: Pulmonary Tuberculosis and Its Complications, 1910.

Many of the effects of climate on the human system are well known, and there is no reason to suppose that the tuberculous patient is exempt from the ordinary laws of Nature in this respect. It is not so easy to live the outdoor life at rest or in activity in a place where fog and rain, snow and cold, stormy weather prevails, as it is in one where week after week passes without a cloud in the sky or a drop of rain fall. And what state in the Union has such a glorious climate as ours; what state has the combination of desert and valley, mountain and sea, giving us almost any altitude and kind of air we desire for the different classes of cases? And what state has men better versed in the diagnosis and treatment of this disease than we have here in California—such as Rothschild of San Francisco, Pottenger of Monrovia, Bridge, Barlow, Cole and Browning of Los Angeles, and many others who are doing such a noble work among us?

A word as to the physician himself, for, after all is said and done, as Dewey said of his gunners at Manila, "It is the man behind the gun that does the work." In the treatment of no other disease does the personal equation of the attending physician have such an important bearing. It is *the man* who administers the remedies who produces results. If he is capable of impressing his will and personality on his patients he can get the closest supervision of their lives. Cheerfulness in a patient aids in his recovery, for good spirits is the best medicine, and the sunshine of a smile can dissipate many a cloud. From the doctor should come the will, the interest, the cheerfulness and enthusiasm for the patients.

ABSTRACT OF DISCUSSION

DR. MAX ROTHSCHILD, San Francisco: The varied opinions of different authorities in regard to immunization and the divergent views of other authorities in regard to the effect of the different tuberculins show clearly that we are still in a condition of deplorable uncertainty in regard to immunization and treatment with tuberculins. Hypotheses and theories have been published, accepted, and condemned. Statistics have been given by which reliable authors have tried to prove that the use of tuberculins is misjudged; that the method has no merit whatever, and that just as good results have been achieved with proper dietetic, climatic and physical treatment. On the other hand, other authorities, just as reliable, show by their statistics that such results as theirs could be achieved only by the use of tuberculins. I am a strong believer in tuberculin. Carl Spengler and his followers claim wonderful results from their immunizing bodies; another school asserts that treatment with these bodies is ridiculous. If I had the time, I could bring up many other points in which the opinions of well-recognized authorities are directly opposed. We must admit that as yet we have only a little absolute knowledge of immunization, as well as of the way in which the different tuberculins act, and of the ultimate results. We know very well that we can produce immunity against certain poisons and toxins; but we do not definitely know where these immunizing bodies, or antibodies, or antitoxins, are to be found in the system. The theories of phagocytosis, opsonins, agglutinins, precipitins, etc., have all been very alluring and attractive, but they have helped our real knowledge very little. We know that we can produce immunity against tuberculins, but this immunization against tuberculins does not produce immunization against tuberculosis. This is a most important fact, which we are apt to overlook. For the administration of tuberculins, two methods exist at present. Koch's school endeavors to work the tuberculins up to large amounts. Sahli and his followers, on the other hand, try to avoid all reaction, and use small amounts of tuberculins. The latter method gives good results, is not dangerous, is a better way for the practitioner, and for ambulatory treatment. I have used it for a number of years; in fact, I had advocated it quite a while before Sahli's first publication appeared. I hope not to seem immodest if I mention my first paper on the subject, which I read in 1906 before the San Francisco Medical Society, in which I gave my experience with intravenous injections of atoxyl and tuberculins for the first time. In this paper I called attention to four points which, in combination, had given the most satisfactory results: keep your tuberculous patients in bed as long as you can, have them stay out doors in the fresh air day and night, use tuberculin in combination with atoxyl, intravenously, and avoid reactions. This brings me to the end of Dr. Shepard's paper, where he recommends the use of intravenous injections. I have used only this method for the last eight or ten years. I like it because it is clean, accurate and painless; and because the negative phase after the injection is shorter, and the positive phase longer, than after a subcutaneous injection. I do not maintain that it is better than other methods—it is to a great extent a matter of personal like or dislike—but I believe, with Dr. Shepard, that anyone who tries it for any length of time will become an advocate of this method.

DR. EDWARD VON ADELUNG, Oakland, Cal.: In private practice when asked to take care of a tuberculous person should we not always consider what we have learned from pathology, that the children of tuberculous parents are nearly always infected? As practicing physicians we should not consider our duty performed, especially to the children of a tuberculous family, until we have made it clear to the family that it is almost a certainty that the children are already infected. This point having been settled, the children of tuberculous persons should be put under treatment immediately. It does not seem rational to treat the tuberculous parent of a family and leave the children to fight the battle alone for years against the implanted tuberculosis. If tuberculin is of value, as I believe it is, to increase tissue resistance to tuberculosis, the time to use it is as soon as infection occurs. Not only the tuberculous parents but those associated with them should be given prophylactic treatment and tuberculin.

DR. F. M. POTTENGER, Monrovia, Cal.: In regard to the method of intravenous administration, I think that it, like the choice of a preparation of tuberculin, is largely an individual matter. I believe that any preparation of tuberculin is of value. I also believe that it can be used in any way in which it can be made to reach the circulation. I am often asked what preparation of tuberculin I would suggest in a given case. I always reply: "The one which the physician who is expecting to treat the patient knows best how to use." My reasons for preferring subcutaneous to intravenous injections are that they are simpler and less hazardous, although there should be no risk when intravenous injections are given correctly.

It is probable that tuberculin is changed by the first cells with which it comes in contact when it enters the body; and that, if antibodies are to be produced, they are largely produced by the cells at the point of inoculation. Probably one reason why tuberculosis does not heal out more often by the natural tuberculin which is given out from the foci of infection is that the cells which first receive the tuberculin stimulation are injured and unable to respond in the production of antibodies. It is possible that they may destroy the tuberculin without producing antibodies.

When tuberculin is introduced intravenously it passes directly to the lung and its force is spent in stimulating these same injured cells, while, when administered subcutaneously, its force is spent on the local cells at the point of inoculation, which should be better able to respond. I also believe that the slower absorption from the subcutaneous route is an advantage.

DR. GERALD B. WEBB, Colorado Springs, Colo.: In general the inoculation of toxins by the intravenous method yields the smallest amount of immunity. The subcutaneous inoculation of toxin yields more antitoxin. I would ask Dr. Shepard if he has measured in any way the antibodies produced by the intravenous method. Latham of London advocates the stomach route for tuberculin. As I pointed out in a paper earlier this morning, this is a hypoblastic route for treating disease of a

hypoblastic structure. I do not agree with Dr. von Adelung that all children who react to tuberculin should at once be treated with tuberculin. The fact that 95 per cent. of children in certain communities will react to tuberculin at the age of 12 should be interpreted as Nature's crude way of vaccination. The hypersusceptibility produced is in a certain degree protective to further infection.

DR. CHARLES A. SHEPARD, Needles, Cal.: I have used atoxyl for years in these cases. I have never seen any harm result, but I employ a much smaller dose than others have advocated, using only ⅓ to 1 gr.; I think it is of great benefit as an addition to tuberculin in producing phagocytosis. I think tuberculin is a most valuable agent used as a prophylactic in children whom we find to be tuberculous. In answer to Dr. Webb, we did not measure the difference in the antibodies intravenously and subcutaneously. We simply went by the signs of reaction.

A PLEA FOR LARGER INCISIONS AND MORE THOROUGH EXAMINATIONS IN ABDOMINAL SURGERY *

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While some surgeons make ample incisions and a thorough examination as a matter of routine, there are many more who do not do so, and it is with a hope of being helpful to this latter class that this paper is written. The average surgeon is prone to do his abdominal work through too small an opening. He points with pride to an inch and a half scar after an appendectomy, and a two and a half inch scar after an operation for the relief of pathologic conditions in the pelvis.

We acquired this habit, first, because of our earlier experiences with ventral hernias, which were not uncommon in the practice of every operator, in which, naturally, the smaller the original opening the smaller the subsequent hernia. Then men with dextrous fingers vied with each other to see who could do his work through the smallest opening. With our improved technic stitch abscesses and infected wounds are practically eliminated, and a ventral hernia is a rare sequel; hence this reason for a small opening no longer obtains. It would be very discomfiting to us if we could fully realize how often we have left unrecognized pathologic conditions because our opening was too small to admit of a proper examination, and because we had not acquired the habit of making a thorough examination of the whole abdominal contents in every instance.

When made at one of the accepted points of election there is no valid reason why an opening should not be amply large to permit the introduction of a hand, and, if need be, an arm, for a thorough exploration of the most remote corners of the abdominal cavity. It is infinitely better to make the opening large enough to admit the hand without force than to contuse the edges of the wound by a forcible introduction of the hand or with retractors. Faulty wound-healing has very often been due to too great or too prolonged pressure from retractors, or to forcing a tumor through too small an opening.

With our present technic a large opening will heal just as surely and as perfectly as a small one, and there can be no objections to the larger opening except those based on our former and less perfect technic. Our natural prejudice against a long cicatrix for esthetic reasons, is no longer tenable because the objection is only a fancy, while the fact is that we can do our patients much better service through a longer incision. The laity are now so accustomed to abdominal scars that the size of the scar is no longer a matter of importance to them.

At one time I was quite proud of the fact that I could remove an appendix through a McBurney incision just large enough to admit my index-finger. My pride sustained several serious jolts, however, when I was called on to perform a later operation for the relief of conditions overlooked at the first one. Doubtless many other patients who were not relieved by my esthetic operation went to other surgeons for relief, the result being that I was discredited and my patients were subjected to the suffering, danger and expense of a second operation, and had two scars instead of one, all for the sake of a dainty little scar in the first instance. Every surgeon present must admit that he has had like experiences unless he was wiser than I and made large incisions from the first.

These experiences led me to question the merit of the small opening, but I did not fully realize the error of my ways until I had the following experience. A young man was brought to me for immediate operation with a diagnosis of acute appendicitis. He gave the history of having had a number of previous attacks, but none so severe as the present one. He had been ill but a few hours, had vomited repeatedly, and was suffering very severe pain all through the abdomen, but worse in the right iliac region. His whole abdomen was very rigid. There was marked tenderness over McBurney's point. A McBurney incision was made through which a slightly swollen and congested appendix was removed. Some serum escaped through the wound. The condition of the appendix did not seem serious enough to account for the severity of the symptoms, so a finger was passed into the opening and by forcibly depressing the abdominal walls with the knuckles a distended viscus could be felt. The original incision was closed, and a liberal median incision made through which a hand was introduced, and an intussusception of the ileum into the cecum found. The intussusception, which was caused by an inverted Meckel's diverticulum, was reduced, the diverticulum removed and the patient restored to health. The real condition here might, and ordinarily would, have been undiscovered through the short incision, and the patient would have lost his life unless subjected to a second operation very promptly. As it was, two incisions were made, whereas one of the right size and properly located would have sufficed.

The making of large incisions will not prevent oversights unless a thorough examination is made. A very common mistake made by operators is to be content when they have relieved one condition without looking for others. Even when a condition is found seemingly sufficient to account for all the symptoms, a careful search should be made for others. When one adhesive band is found there are very likely others. An appendix may be removed leaving gall-stones behind, or *vice versa*. Gall-stones may be removed from the gall-bladder and one or more left in the common duct. One typhoid perforation may be closed and others left. Since following the practice advocated in this paper my findings have been so numerous and my surprises so great that I wonder I ever had the temerity to operate through a small incision. The examination should be systematic and thorough, and the operator should never be content

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

until he has found conditions that will fully account for all the symptoms. The appendiceal region, the pelvis, gall-bladder and stomach regions should always be examined as a matter of routine. Most surgical conditions will be found in these regions, but the following experience impressed on me the fact that grave conditions may be found in most obscure and unsuspected regions:

A country physician recently telephoned to me that he was sending a patient on the next morning's train for an operation for appendicitis. He said, "My diagnosis is appendicitis, but the symptoms don't check up right. Do whatever is necessary for the boy." The patient, a boy of 16, had a normal temperature, an accelerated pulse, a slightly distended abdomen, with tenderness most marked in the lower right quadrant. The most marked feature in the history was that he had been suffering for some weeks with severe cramps and occasional vomiting immediately after eating. An incision was made along the margin of the right rectus, and the appendix was found slightly congested and swollen, but in no condition to account for the symptoms. On inspection the intestines looked normal, but there was some serum present. The danger regions were all carefully examined and nothing found. Beginning at the ileocecal valve a search was made for a Lane's kink, and a small Meckel's diverticulum was found from which a long narrow band extended to a point high up and deep within the abdomen. Underneath this band was a large loop of bowel, not tightly constricted, but the lumen of the bowel was reduced about one-half. The intestine was thickened and sore at the point of constriction, showing that it had been in that position for some time. It was evident that the patient's pain after eating was due to the peristalsis set up by the food. The removal of the diverticulum and band were followed by recovery, with complete relief from pain.

The appendix is so frequently the seat of trouble that the tendency is to make a diagnosis of appendicitis on insufficient grounds. The diagnosis of appendicitis is about the easiest of all diagnoses of intra-abdominal conditions, yet the diagnosis of appendicitis is probably the most frequent wrong diagnosis made. This may be accounted for partly by the fact that appendicitis so frequently complicates other conditions; but it is doubtless due often to the natural tendency of mankind to jump at conclusions. The mistake of removing the appendix when the real cause of the patient's suffering is elsewhere can be so easily avoided by a thorough examination through an ample opening that it seems almost superfluous to argue the matter. Since adopting this method as a routine practice I have found unsuspected gall-stones, appendicitis, adhesive bands, Meckel's diverticulum, internal hernia, Lane's kink, intestinal adhesions, tuberculosis and other conditions too numerous to mention, most if not all of which could not possibly have been certainly diagnosticated by any other method.

The location of the incision is not so important as its size. When the location of the pathologic condition is not definitely known, or when it is definitely known to be in the pelvis or lower abdomen, the median incision is undoubtedly the best, as it affords easy access to all parts, and does the minimum amount of harm. In the upper abdomen the incision should be through or at the inner edge of the rectus because of the presence of the triangular ligament in the median line.

Useful and anatomically correct as the McBurney incision is, it is undoubtedly the one which is responsible for the greatest number of oversights, because it is satisfactory only when it is made small. It can be made large, but in so doing much greater damage is done to the muscles and nerves than by a median incision, and its location is not nearly so satisfactory for general work. It is very much easier to remove an appendix through a median incision than it is to do pelvic work through a McBurney incision. The muscle-splitting incision should be restricted to cases of suppurative appendicitis in which there is no indication for going far into the abdomen, and to unmistakable cases of chronic appendicitis without complications.

In other words, the day of the short incision is past in all but exceptional cases.

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STUDIES IN INFARCTION

EXPERIMENTAL BLAND INFARCTION OF THE KIDNEY AND SPLEEN *

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The early history of the study of thrombosis and embolism is so completely reviewed in the articles of Virchow,[1] Cohn[2] and Welch,[3] that it seems hardly necessary at this time to consume time and space with its detailed presentation. It is very evident that Galen, Vesalius, Lancisi, Bartoletti, Bonetus, Boerhave, and Morgagni had, in a general way, fairly clear ideas as to the nature of these conditions, although, as would naturally be expected, they made no sharp distinctions between the two. Laennec's description of hemorrhagic infarction of the lung, under the name of pulmonary apoplexy, was most illuminating, although he seems to have had little knowledge of the nature of infarction in general. Rokitansky[4] had a much broader conception, but failed to differentiate the possible causes. The results of Cohn's experimental work, as well as of Pannum's,[5] are not conclusive, in that infection and secondary inflammatory changes were almost constant complications.

In 1872 Cohnheim[6] published his "Untersuchungen." The largest part of his work was done on the frog's tongue, but he also extended his experiments to the rabbit's ear, guinea-pig's mesentery and the mammalian kidney. He formulated the conception of end-arteries; a distinction which later observers, notably von Recklinghausen,[7] have shown to be less absolute than Cohnheim taught. Disregarding the earlier work of Cohn and of Blessig,[8] Cohnheim concluded from his own work

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* From the Department of Research Medicine and McManes Laboratory of Pathology, University of Pennsylvania. Aided by a grant from the Committee on Scientific Research of the American Medical Association.

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3. Welch, Wm. H.: Hemorrhagic Infarction, Tr. Ass. Am. Physicians, 1887, ii, 121.
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5. Pannum, P. L.: Experimentelle Beiträge zur Lehre v. der Embolie, Arch. f. path. Anat. u. Phys., 1862, xxv, 308.
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7. Von Recklinghausen, F.: Handbuch der allgemeinen Pathologie des Kreislaufs, Stuttgart, 1883, p. 156.
8. Blessig: Ueber die Veränderung der Niere nach Unterbindung der Nierenarterie, Arch. f. path. Anat. u. Physiol., 1859, xvi, 120.

that the blood in a hemorrhagic infarct represents a reflux from the veins.

Von Zielonko,[9] working under von Recklinghausen, studied areas of obstructed circulation in the web of the frog's foot. He showed conclusively that, at least in the web of the frog's foot, the blood enters and distends the capillaries of the infarcted areas from the capillaries of the neighboring areas and never by a return flow from the veins. He also showed that the arterial pressure in the surrounding areas is an important factor in determining the degree and rate of hemorrhagic extravasation. He noted at the end of five or six days the beginning decolorization of the hemorrhagic area. Kossuchin,[10] in 1876, working on the frog's tongue, reached practically the same conclusions; and in 1878 Küttner[11] demonstrated, by injections, the free capillary anastomosis existing between the bronchial and pulmonary circulations in both amphibian and mammalian lungs, and thus opened the way for an explanation of the hemorrhagic character of pulmonary infarcts. A more effective influence, however, in overthrowing Cohnheim's teaching was Litten's[12] repetition, in 1881, of Cohn's and of Blessig's experiments on the kidney. After ligating the renal artery of the rabbit, he obtained greater hyperemia and hemorrhage when he ligated in addition the renal vein, than when he left it open; on the other hand, if he also ligated all sources of collateral circulation, the hyperemia and hemorrhage were reduced to a minimum even although he left the renal vein free. Von Recklinghausen[13] attributed to partial hyaline thrombi, which he observed in the capillaries of hemorrhagic infarcts of the lungs and spleen, an influence which raises the pressure in these capillaries and predisposes to diapedesis. Brown-Séquard[14] had pointed out the possibility that lesions of the vasomotor nerves accompanying the obstructed artery might be a factor in the capillary dilatation. Recently Bier[15] has emphasized the same possibility and has shown that, after section of the artery and vein of the hyperemic area, the blood still remains in the dilated capillaries; whence he concludes that the capillary dilatation is to some extent independent of the transmitted arterial or venous pressure. Mall[16] found it exceedingly difficult to inject from the mesenteric veins into the capillaries and impossible to inject from the veins back through the capillaries into the arteries.

Detailed studies of the anatomic and histologic changes in infarcts of the spleen and kidney, at different periods after infarction, have been made by several observers. Beckmann[17] believed that the infarcts of the kidney were seen as pale infarcts with little evidence of blood, and opposed Rokitansky's view that the pale renal infarct represented a decolorization of the earlier hemorrhagic infarct. Later Weigert[18] emphasized the same conception of anemic infarcts as distinct from hemorrhagic infarcts, and in spite of much evidence to the contrary, his view attained wide general acceptance. Both von Recklinghausen and Thoma[19] apparently accepted his view. In 1877 Argutinsky[20] studied renal infarcts in the dog twenty-four hours and seven days after the injection of wax pellets into the aorta through the crural artery. Contemporaneously Uhthoff[21] made a similar study, using mercury instead of wax. Both observers noted the presence of hemorrhage, or of pigmentation the result of hemorrhage, widespread throughout the infarcted area, thus opposing the theory of Beckmann and Weigert. Talma[22] studied rabbits in which he ligated one branch of the renal artery. In the first twenty-four hours he found the infarcted area swollen and red, but laid stress on the hyperemia rather than on the hemorrhage. Foa[23] in a similar series found that a few seconds after ligation, the infarcted area might be pale, but that at the end of twenty-four hours it was swollen and red. He noted the presence of moderate hemorrhage.

In spite of this work, Thoma[19] in 1894, still described the renal infarct as pale from the outset. More recently Beattie and Dickson[24] report work done by Forbes[25] under Greenfield's direction, in which seeds were injected into the arterial circulation. In the kidney they note, in the early stages, congestion with slight hemorrhage, most marked in the medulla; later, pallor develops both centrally and peripherally, associated with necrosis throughout the infarct. In the spleen they find hemorrhage to be very conspicuous in the early stages, with decolorization appearing later.

Regarding regeneration in the kidney, Litten, Petrone,[26] Arnold,[27] Weigert, Podwyssozki,[28] Thorel[29] and Pearce[30] all have noted epithelial proliferation after various renal lesions, but no true tubule reproduction and no formation of new glomeruli. Pisenti[31] alone claims to have seen, after excising small pieces of kidney, some attempt at the formation of glomeruli and true tubules. Except in those cases associated with abscess formation, organization of the infarcted area has been noted by all observers, beginning, during the course of the first week after infarction, at the periphery and gradually extending toward the center. Very recently MacNider[32] has presented a series of experiments on the cat, in which he ligated one branch of the renal artery and made histologic studies at intervals of from twenty-two hours to ninety days, especial attention being given to the regenerative changes.

The present group of experiments represents the first of a series in which is contemplated the study of infarc-

9. Von Zielonko, J.: Ueber Entstehung der Haemorrhagien nach Verschluss der Gefässe, Arch. f. path. Anat. u. Physiol., 1873, lvii, 436.
10. Kossuchin, A.: Zur Lehre von dem embolischen Infarkte, Arch. f. path. Anat. u. Physiol, 1876, lxvii, 449.
11. Küttner: Beitrag zu den Kreislaufsverhältnissen der Froschlunge, Arch. f. path. Anat. u. Physiol., 1874, lxi, 21; Beitrag zur Kentniss der Kreislaufverhältnisse der Säugethierlunge, Arch. f. path. Anat. p. Physiol., 1878, lxxiii, 476.
12. Litten, M.: Untersuchungen über haemorrhagischen Infarkte, etc., Ztschr. f. klin. Med., 1880, i, 131.
13. Von Recklinghausen: p. 160.
14. Brown-Séquard: Quoted by von Recklinghausen: See Note 7.
15. Bier, A.: Die Entstehung des collateralen Kreislaufes, Arch. f. path. Anat. u. Physiol., 1898, cliii, 434.
16. Mall, F.: A Study of Intestinal Contraction, Johns Hopkins Hosp. Rep., 1896, i, 37.
17. Beckmann, O.: Embolie der Arteria mesenterica superior, Arch. f. path. Anat. u. Physiol., 1858, xiii, 501.
18. Weigert, C.: Ueber die path. Gerinnungsvorgänge, Arch. f. path. Anat. u. Physiol., 1880, lxxix, 87; see p. 104.
19. Thoma, R.: Lehrbuch der pathologischen Anatomie, Stuttgart, 1894, vol. i.
20. Argutinsky, P.: Beiträge zur normalen und pathologischen Histologie der Niere, Halle, 1877.
21. Uhthoff, W.: Experimentelle Beiträge zur Nephritis, Inaug. Diss., Berlin, 1877.
22. Talma, S.: Der Verschluss der Nierenarterien u. seine Folgen, Ztschr. f. klin. Med., 1881, ii, 483.
23. Foa, P.: Ueber Niereninfarkte, Beit. zur path. Anat. u. Physiol., 1889, v, 275.
24. Beattie, J. M., and Dickson, W. E. C.: General Pathology, Philadelphia, 1908, p. 165.
25. Forbes, quoted by Beattie and Dickson: See Note 24.
26. Petrone, A.: La rigenerazione del fegato e del rene per neoformazione dei loro dutti escretori, Giornale Morgagni 1881, xxiii, 805.
27. Arnold, J.: Beiträge z. Anat. des miliaren Tuberkels, Ueber Nierentuberkulose, Arch. f. path. Anat. u. Physiol., 1881, lxxxiii, 289; see page 295.
28. Podwyssozki, Jr., W.: Ueber Regeneration der Drüsengewebe, Beitr. z. path. Anat. u. Physiol., 1888, ii, 3.
29. Thorel, C.: Ueber typische u. Pseudoregeneration bei Niereninfarkten, Arch. f. path. Anat. u. Physiol., 1896, cxlvi, 297.
30. Pearce, R. M.: Notes on Late Stages of Repair of Kidney Tissue, etc., Jour. Med. Res., 1909, xx, 53.
31. Pisenti: Sur la cicatrization des blessures du rein et sur la generation partielle de cet organe, Arch. ital. de biol., 1884, vi.
32. MacNider, William de B.: The Pathologic Changes which Develop in the Kidney as a Result of Occlusion by Ligation of One Branch of the Renal Artery, Jour. Med. Res., 1911, xxiv, 425.

tion in all its phases. Up to this time the greater number of investigators in the field have studied not only infarction, but also the closely related subjects of thrombosis and embolism. That these two latter conditions, of importance in the etiology of infarction, have distracted attention from the infarct itself is reflected in the insufficient reports on the gross and minute anatomy of infarcts and in the incompleteness of experimental procedures to elucidate the various changes found. We propose to study the anatomy of the infarcted areas in various stages, both under normal conditions of circulation and with certain experimental variations in the general circulation of the organ in question; we shall take up certain problems in physiology and physiologic chemistry suggested by our observations and shall extend the investigations to all the available organs of the body so as to be able, on the completion of the study, to make definite and conclusive deductions.

METHODS

The study presented at this time concerns infarction in the kidney and spleen of the dog under normal and variously altered conditions of circulation. In the spleen the vascular arrangement is comparatively simple and the only practicable experimental variation in circulation of any significance was the cutting off of the general arterial supply. In the kidney, however, the fact that the organ is supplied and drained by renal, ureteral and capsular vessels makes matters more complicated. With the capsular vessels we include the anastomoses with the adrenal and lumbar circulation. It was, therefore, necessary to study the kidney under the following conditions:

1. With normal circulation.
2. With renal artery ligated.
3. With renal vein ligated.
4. With renal artery and vein ligated.
5. With renal artery, vein and ureteral vessels ligated.

In female dogs the additional anastomosis with the ovarian circulation is usually very rich and required special ligation. In all cases with ligation of the ureteral vessels any possible flow of urine from the kidney was provided for by the insertion of a small aluminum cannula into the ureter, the silk being tied around it. Decapsulation in addition to universal ligation was not practiced, since it was found that it led to extensive suppuration of the kidney and, moreover, the universal necrosis under these conditions rendered the study of the infarcts impossible.

In ligating the splenic artery, particular care was taken to tie off also the branches anastomosing with the gastric artery. On several occasions simple ligation of the splenic veins was tried, but the early infarcts were entirely obliterated by the swelling resulting from this procedure, and the later ones showed no marked differences from those of normal spleens, with the exception that the entire mass of the spleen was much diminished and the organ pallid in appearance. Accordingly, it was felt that no additional information of value could be obtained from an extended series of this kind. The dogs in all the groups were killed two, four, twelve, twenty-four, forty-eight hours, and four and seven days after the production of the infarcts.

The operations were all done aseptically and under deep ether anesthesia. A median abdominal wound was made from 2 cm. above the umbilicus to the pubis and the left common iliac artery exposed. For the insertion of the emboli an annealed soft copper tube, 35 cm. long and 1 mm. in caliber, provided with a flexible steel obturator, was used. After orientation experiments with begonia, aldike clover, mustard and tobacco seeds, the last were found to be most satisfactory, and were used uniformly throughout the series. About 50 seeds were placed in the end of the copper tube in a space left by drawing the obturator back for a distance of 2 cm. The instrument was inserted into the iliac artery and as far up the aorta as desired. It was not long before sufficient skill was acquired to avoid abrasion of the intima of the aorta. For the production of splenic infarcts it was necessary to have the end of the tube 2 to 3 cm. above the origin of the celiac axis and to occlude, by pressure with the finger, the superior mesenteric, renal and right common iliac arteries. For the production of renal infarcts the end of the cannula was placed just below the origin of the celiac axis and the superior mesenteric and right common iliac arteries occluded. In those cases in which both renal arteries were left open, it was found that placing the cannula at any point above the origin of the right renal artery resulted in more frequent infarction of the right kidney than of its fellow; and when both organs were infarcted, the infarctions were more numerous in the right. For this reason most of the work was done on the right kidney. It was necessary to occlude the mesenteric artery temporarily, so as to avoid the entrance of seeds into the arteries of the intestines and the consequent production of gangrene. Where several renal vessels were ligated, the artery was tied first, then the vein, then the ureteral vessels, and, in females, the ovarian circulation.

Heavy white silk (Corticelli EE) was used for all ligations. The wound was closed by the usual surgical procedure, and after the given time had elapsed, the animals were killed with chloroform. At autopsy the success of the ligations was carefully determined, gross notes and diagrams were made, the tissues fixed in Zenker's fluid, embedded in paraffin and stained with Delafield's hematoxylin and alcoholic yellow eosin. The minute study of the slides was aided by and correlated with the gross diagrams and notes.

RESULTS

Grossly, the experimental infarcts of the kidney became distinctly visible at the surface of the organ in from three to five minutes after the injection of the seeds into the aorta. The first noticeable change was the appearance of a brilliant purple color which occupied a large part of the infarcted area. This congestion gradually extended until, in about ten minutes, the infarct in its entirety was sharply defined. (In only one infarct was there any exception to this rule. This was in a somewhat fibrosed organ, the infarct appearing first as a pallid area with a purple marginal zone, the entire area becoming purple, however, in less than two minutes after the infarct became distinguishable.) No definite swelling was noticeable in this early stage, probably because of the tension of the kidney capsule. At the expiration of two hours, however, the entire kidney, which at first had been of a bright pink color, became of a color so closely matching that of the infarct that the outline of the latter, in a large number of cases, was almost entirely lost. At the end of four hours, although still lacking in definition on the outer surface, the infarct could be fairly well defined in the cut surface. At this time in all the kidneys examined, the infarct was seen as a purple mass of deeper color than the surrounding kidney, rather poorly defined, moist and bloody, usually bulging on section and occasionally protruding somewhat above the surface of the organ. At

this stage there was present in the vast majority of instances, a peripheral zone rarely more than 1 mm. in width, in which the tissue was somewhat lighter in color than in either the infarct or the surrounding kidney substance. The fact that this zone could not be distinguished microscopically, leads to the conclusion that it represents a zone of relative compression anemia. This pallid area remained visible for several hours, disappearing in from twenty-four to forty-eight hours, when the infarct reached the limit of its elevation and deep color and began to fade and retract. Necrosis began in the infarcts of the normal kidneys in forty-eight hours, the same being true of the infarcts in those kidneys in which the arterial supply was cut off without other interference with the circulation. After simple ligation of the vein, necrosis appeared in the infarct at the end of twenty-four hours; and with additional ligation of artery and ureter, it appeared in from twelve to twenty-four hours. Usually coincident with the necrosis, a clearly visible, but always very narrow, zone of reactive hyperemia appeared at the margin of the infarct, but congestion of this kind was by no means a constant feature. The necrosis appeared first as irregularly distributed, minute areas near the middle of the infarct, in the later stages becoming larger and fusing to form solid, fairly large masses of necrotic material. In the late infarcts (four to seven days old) where the outer surface and cut surface showed retraction of the infarcted mass, the central necrotic mass was often surrounded by a red zone, which histologically was found to be in part the remnant of suffused blood that had not undergone complete necrosis and in part blood which had infiltrated from the reactive hyperemia. Outside this zone was frequently seen a pallid zone which histologically corresponded to the zone of forming connective tissue. There is little doubt that with the progress of the necrosis, the intermediate zone of redness gradually disappears. Furthermore, in small infarcts this red zone was completely absent at the end of seven days. It must be said, however, that the sequence of gradual changes was not shown nearly so well in gross as in microscopic specimens. Indeed, it seems highly probable that the infrequence of the finding of red infarcts in the human kidney, is due to the fact that in this early stage the infarcted area is so ill defined as to be practically indistinguishable. A point of considerable interest is the fact that the infarcts were often very irregular in outline and varied markedly in general conformation, being most frequently conical, but very frequently hemispheric or cylindric.

The infarcts of the spleen became easily visible even more rapidly than did those of the kidney. They appeared as deep purple, fairly well-defined areas, usually triangular in shape near the poles or margins, but when occurring midway between the poles, extending as linear masses transversely across the organ. No portion of the spleen was more commonly infarcted than another. The most striking feature of the infarcts in this early stage is their marked swelling, which in many cases caused infarcts 1 cm. broad to project 3 to 4 mm. above the surface of the organ. At two and at four hours after infarction, the appearance of elevation was lessened and the outline of the infarct was not so well defined, probably because of the general enlargement and increased depth of color of the organ resulting from general congestion. A small percentage of the earlier infarcts showed a narrow pallid marginal zone, similar to that sometimes seen in the kidney infarcts, but again histologic examination failed to prove its nature. Necrosis did not appear in the infarcts of the spleens with unaltered general circulation until a week had elapsed, but in the series in which the splenic artery was ligated, necrosis was noted at the end of forty-eight hours. The necrosis, at first, was irregularly distributed, but later extended throughout the center of the infarct, except in one infarct in which the white necrotic mass had a central dry, red area. No zone of reactionary hyperemia was demonstrable at any stage of the condition, and it may safely be said that the only significant difference brought about in the course of the infarcts by artificially altering the circulation was that ligation of the artery caused necrosis to appear earlier than when the general circulation was not disturbed.

Histologically the infarcts presented pictures that showed very clearly the progress of the condition. In those infarcts which grossly were distinguished only with the greatest difficulty, the microscope showed unmistakable signs of focal interference with circulation and no mistake in the diagnosis was possible. Rather vaguely outlined in the early stages, definition became clearer and sharper as the condition progressed.

In the normal kidney, two hours after infarction, there was a small zone of subcapsular hemorrhage overlying the infarct, and well-marked congestion of the intertubular capillaries and of the capillaries of the tufts. The blood in both regions was distinctly conglutinated, although in a specimen taken one hour after infarction (not included in the general series and only differing in this one respect) the conglutination had appeared in the intertubular capillaries, but not in the glomerular loops. The blood at this time was confined to the vessels, with the exception of a few corpuscles found here and there in the midst of the space occupied by a very well-marked interstitial edema, and in the subcapsular space which also showed a finely granular albuminous deposit, evidently of an edematous fluid. The tubular epithelium, especially of the convoluted tubules, showed marked cloudy swelling but practically no desquamation, and the nuclei of these cells showed slight fading of the central chromatin, the margins being still sharply defined. The lumina of the tubules were somewhat enlarged because of thinning of the cells surrounding them, but were well filled with a finely granular albuminous material, probably edematous in character. The larger vessels and the vessels of the medulla showed fairly well-marked congestion, but the medulla in this, as well as in all other sections, showed no other notable changes except for moderate fibrosis in the very late stages.

At four hours the conglutination had progressed, and some of the blood in the middle of the infarct showed fading of the hemoglobin. The tubular epithelium was more markedly degenerated and showed moderate desquamation. Desquamation and well-marked cloudy swelling were also observed in the epithelium lining the capsule of Bowman. The edema had become more marked in all situations, being accompanied in the glomerulus by distention of the capsule. Well-marked pyknosis and karyolysis were present.

At twelve hours, aside from the fact that the infarct was sharply defined, there were no notable changes except in degree.

At twenty-four hours the infarct was very clearly defined and it had become possible to distinguish two zones: an outer zone in which the necrosis had evidently come on rapidly, giving the infarct its sharp definition; and an inner zone where hemorrhage had become well marked. The tubules and subcapsular spaces of this

marginal zone appeared as coarsely granular, or almost hyaline, acidophilic masses and the interstices between the tubules, in the inner part of this zone, were occupied by conglutinated red blood-cells, and, in the outer part, by fresh, well-stained, non-conglutinated red cells, the latter being largely intravascular and very evidently dependent on a slight hyperemia in the surrounding living tissue. A few polymorphonuclear leukocytes were found in this zone.

At forty-eight hours the conditions were much the same, except that the center of the infarct showed hemorrhage more clearly, and the fading of the red cells had progressed to a considerable degree.

At four days the necrotic central zone was greatly increased in size. A zone of solid necrosis, seen as a peripheral zone in the preceding sections, now became an intermediate zone, due to the appearance of an outer marginal zone of growing connective tissue, somewhat poorly vascularized. No mitotic figures were demonstrable.

At seven days the fibrosis was more extensive, and occasional mitotic figures were seen in the tubules near the margin, but with no evidence of new formation of tubules.

Ligation of the renal vein resulted in several changes in the microscopic appearances of the infarcted and non-infarcted areas. The most notable change was in the blood content, which in the infarct was very much greater than in the non-infarcted area; and two hours after infarction there was seen slight, but easily demonstrable, hemorrhage into the subcapsular space and the interstitial tissue of the pulp. Edema was about the same in this as in the preceding series. The infarct became sharply defined in four hours (earlier than in the first series), showed somewhat more rapidly progressing hemorrhage and conglutination and an early fading of the masses of blood in the middle of the infarct which became almost complete at twenty-four hours. As a whole, the series was characterized by more marked circulatory alterations and more rapid degenerative changes in the parenchyma than were evident in the kidneys with normal general circulation. At four and seven days after infarction, the central zone showed a rich, very fine network of fibrin in the positions from which the erythrocytes had disappeared. The new growth of connective tissue was not especially different in progress or character from that seen in the previous series. In the surrounding kidney substance, cloudy swelling, edema, and congestion were observed very early; definite necrosis was not demonstrated; hyaline casts became evident in four hours, and rapidly increased; and regenerative changes in the epithelium were not demonstrable.

With ligation of the renal artery alone, the blood conditions in the infarct were much the same as in the series with normal general circulation, except that the blood-content of the necrosing area was less, although not markedly so. The changes in the suffused blood progressed with the same rapidity as in the first series; the infarct became sharply defined at four hours (earlier than in the first series, at the same time as in the second series); decolorization of the corpuscles was well-marked at twelve hours and progressed somewhat more rapidly than in the first, and less rapidly than in the second, series; degenerative changes in the parenchyma followed much the same course as in the second series, and fibrin appeared in the center of the infarct just as in the second series. Organization was well-marked at four days. A few mitotic figures were found in the epithelium immediately surrounding the infarct at seven days. The non-infarcted areas showed, in the early stages, well-marked capillary congestion which became much less marked after twelve hours; also moderate edema, well-marked cloudy swelling, going on to distinct necrosis in the later stages, and in the seven-day kidney the presence of hyaline casts.

On ligation of the renal vein in addition to ligation of the renal artery, the infarcts progressed in practically the same way as with ligation simply of the renal artery. This statement applies to blood-content, blood-changes, degenerative changes, and regenerative appearances. Neither did the appearance of the non-infarcted areas differ in any essential feature.

Ligation of renal artery, renal vein and ureteral vessels (and, in female dogs, the ovarian anastomoses) resulted in no distinct variation in the amount of blood in the infarct, or in the subsequent alterations in the blood, from that seen in the third and fourth series, and organization was not noticeably retarded, but the infarct became sharply defined histologically at the end of two hours (more rapidly than in any of the other groups), necrosis progressed with great rapidity (also clearly noted grossly at twelve to twenty-four hours) and no mitotic figures were found in the surrounding epithelium. The non-infarcted kidney substance was anemic from the first and showed rapidly progressing degeneration and necrosis of the epithelium. Hyaline casts were present in considerable numbers at, and after, twenty-four hours; only in the series in which the renal vein alone was ligated, had they been seen so early and in such great numbers.

Throughout all the groups careful microscopic examination showed no very marked leukocytic infiltration. The slight degree of infiltration noted was always marginal, never showed deep penetration and usually appeared at from twenty-four to forty-eight hours.

The spleen at the end of two hours showed rather poor definition of the infarct histologically, with a narrow zone of uninfarcted tissue immediately under the capsule. In the periphery of the infarct was found a marked distention of isolated blood-sinuses with but little or no extravasation. The pulp in this area showed no change, but in many instances the follicles, even though not apparently within the zone of infarction, showed slight pyknosis and karyorrhexis in those cells situated near the middle of the follicles, but not in direct apposition to the central artery. In the middle of the infarct there was more marked distention of the sinuses, more uniformly distributed congestion and very distinct extravasation. Here, also, the follicles were uninvolved by the hemorrhage, but showed somewhat more marked pyknosis and karyorrhexis than did the follicles at the margin of the infarct. Those parts of the pulp that were almost obliterated by congestion and hemorrhage showed moderate pyknosis and karyorrhexis in the remaining cells. Conglutination was moderate in the areas both of congestion and of hemorrhage. The non-infarcted areas showed no pathologic alterations.

At four hours the only changes worthy of note were somewhat more marked conglutination, more extensive nuclear degeneration and a degeneration of the protoplasm of the cells in the infarcted zone as shown by a lessened affinity for the eosin. Trabeculæ, blood-vessel walls and follicular outlines were well preserved.

At twelve hours the infarct became sharply defined by the extension of the hemorrhage into the marginal zone, which previously had shown only congestion. Conglutination was well-marked and necrosis advanced. In

the pulp immediately surrounding the infarct, there was a moderately well-marked infiltration of leukocytes which, however, penetrated but a very short distance into the hemorrhagic area.

At twenty-four hours no additional changes could be demonstrated.

At forty-eight hours conglutination had reached such an extreme degree that the infarct appeared as an almost hyaline, red mass, containing the trabeculæ and small circular areas of nuclear fragments representing the follicles. At this stage the nuclei of the trabeculæ showed a marked diminution in the affinity for the hematoxylin. The marginal leukocytic infiltration was about the same as at twenty-four hours.

At four days the infarct was sharply defined and still showed a narrow zone of living tissue immediately beneath the capsule. In the margins of the infarct a few of the trabeculæ with their blood-vessels persisted apparently uninjured. From the tissue immediately surrounding the infarct, i. e., from the trabeculæ in the margin and their blood-vessels, from the fine fibrillar connective tissue framework of the living pulp, from the thin layer of living tissue underlying the capsule and from the capsule itself, a slight new growth of connective tissue, rather poorly vascularized, had developed. The infarct itself appeared as a mass of almost completely decolorized erythrocytes and many irregularly distributed nuclear fragments. In the center of this mass, the red blood-cells had almost completely disappeared and there was found a fine network of fibrin, enmeshing a relatively small number of fine albuminous granules.

At the expiration of one week, the new growth of connective tissue was somewhat more extensive; the leukocytic infiltration had almost completely disappeared, and the central area of complete necrosis and fibrin formation was somewhat more extensive. At this stage was present a very slight hyperemia in the smaller vessels outside the zone of organization, a feature not demonstrable earlier in the course of the development of the infarct. At no time could granular or crystalline pigmentation of the infarct be demonstrated.

Ligation of the splenic artery produced practically no change in the microscopic character of the infarct, except that the process extended to the capsule without any intervening rim of living cells. In the later infarcts, however, a zone of new growing connective tissue appeared between infarct and capsule, evidently taking its origin from the latter structure. Decolorization of the erythrocytes appeared somewhat sooner than in the preceding series and progressed more rapidly. Necrosis of the cells of the pulp and follicles followed the same course as in the spleens with normal general circulation. The non-infarcted tissue showed no effect of the ligation, except that, after one week, the protoplasm of the larger lymphocytes and endothelial cells showed diminution in affinity for eosin.

CONSIDERATION OF THE DATA

In the discussion of the various facts established by, and inferences to be drawn from, this study, it is proposed to take up, first the circulatory changes with especial reference to congestion, conglutination of red blood-cells, solution of hemoglobin, fibrin formation, then the progress of degenerative changes in parenchymatous and connective tissues, and finally the evidences of regeneration and organization.

A conclusion from the work that is unavoidable is that, in the kidney and spleen, all infarcts are primarily hyperemic. The term "hyperemic" is used advisedly, for in the earlier stages, at least in the kidney, hemorrhage plays a very unimportant part in comparison with hyperemia. In the spleen, the extravasation can be seen distinctly in the center of the infarct four hours after embolism, but in the kidney it does not become an important feature for from twenty-four to forty-eight hours. The hyperemia is diffuse and is much more striking in the capillaries and small vessels than in the larger arteries and veins. The hemorrhage is considered by most writers to be the result of diapedesis due to injury of the vessel walls. From our histologic examination this statement cannot be gainsaid; indeed there is much experimental evidence for accepting it. In the walls of the larger arteries, however, we were not able conclusively to demonstrate early degeneration; their walls were distinctive until long after the hemorrhage had appeared. This does not by any means controvert the statement in question, because diapedesis naturally would take place from the smaller vessels, vessels whose walls are not likely to be well defined under conditions such as are found in the infarcted areas. In the kidney, the early hyperemia was most notable in the intertubular and glomerular capillaries, and as it was in these places that extravasations were seen there is little room for doubt that the capillaries which are the seat of the most intense congestion, furnish the blood that later appears as extravasations. In the spleen, the sinuses of the pulp showed intense early congestion, a congestion which was not, and did not later become, evident in the follicles; the hemorrhage appeared in corresponding position and evidently came from the thin-walled vessels.

In determining the source of the congestion, arteries, veins and capillaries must be considered. It is very unlikely that the capillaries play an important part, because very early they become occluded with the conglutination thrombi, which will be discussed later. In addition, the work of Mall[16] leaves very little doubt that physiologically the capillaries soon become impermeable. The possibility that reflux from the veins plays an important part has also been ably refuted by the same writer. In addition also, the study of our specimens shows that ligation of the veins had practically no effect in varying the amount of congestion after the pressure of the arteries had been eliminated. That the general vascular pressure in the kidney has an influence on the blood-content of the infarct, was shown by the increased amount of blood in the infarct when the vein alone was ligated. Ligation of the main artery and vein was followed by the appearance of relatively little blood in the infarct, doubtless because of the relatively low pressure maintained by the collateral circulation. Cutting down the circulation to a minimum, however, as was done by additional ligation of the ureteral and ovarian circulation, was in no case followed by what might be called an anemic infarct. Where all circulation was cut off, necrosis was so extensive that no infarcted areas could be clearly seen. The assumption is obvious, therefore, that whatever hyperemia is present, is due to the dilatation of the vessels in the infarcted areas and is dependent on the arterial pressure of the surrounding, living tissue; regurgitation from the veins plays no significant part in its production.

Edema of the interstitial tissues and the presence of an excess of albuminous precipitate in the subcapsular space, were constant and early but tended soon to disappear.

Marginal hyperemia, the so-called collateral hyperemia, usually did not appear until forty-eight hours or

more had elapsed. It would seem that this is a local condition dependent on the irritation of the necrotic mass, because it did not appear until necrosis was distinctly in evidence. That it is local was evidenced by the fact that variations in general circulatory conditions did not appreciably influence it.

The term conglutination, used freely in describing the microscopic appearance of the infarcts, is taken to mean clumping and fusion of the corpuscles; mere clumping, however, is of little significance because, of necessity, the corpuscles are in close apposition as they lie in the tissues and vessels. The condition appeared within two hours after infarction, gradually became more marked and reached its height in from twenty-four to forty-eight hours, and then slowly became less manifest because of fading of the corpuscles. Little change in this process was found under the various circulatory conditions, except that in the series of kidneys in which the vein alone was ligated, conglutination reached its height somewhat earlier than in the other groups. What part the heightened pressure played in this variation is problematic, but it seems likely that the chief reason why the change was so notable is that, when the vein alone was ligated, the vessels were richer in blood and the extent of conglutination correspondingly great. In the spleen, conglutination occurred much as it did in the kidney, the only difference being that it appeared to be fairly extensive in the earlier infarcts, probably because the blood is in greater masses in the distended splenic sinuses than in the smaller kidney capillaries.

Fading of the corpuscles or solution of their hemoglobin did not appear, as a rule, until forty-eight hours had elapsed. It was usually seen in the center of the infarcted mass and progressed peripherally, but even at the end of a week, at least in the larger infarcts, there was usually a fairly large mass of conglutinated, well-stained cells between the central pale areas and the marginal zone of the infarct. In none of the slides was granular pigment deposit found, and it seems probable that the hemoglobin diffused into the surrounding tissues without further decomposition. If any flow of tissue juice or plasma occurs in the vessels of the infarcted area it must be extremely slight because of the conglutination thrombi in the capillaries and the coagula in the larger blood-vessels. It is but natural to expect that the earliest and most extreme degeneration would occur centrally, because this part of the mass is furthest from the source of nutrition. It is not likely that leukocytes play any part in the removal of the hemoglobin, because none of the specimens showed deep penetration of these cells into the infarct. Indeed, with the exception of some of the later infarcts in the spleen, there was never more than a very moderate peripheral infiltration of polymorphonuclears, and in the kidney the lymphocytes were even less prominent. That venous drainage has little or nothing to do with the decolorization, is evidenced by the fact that ligation of the vein played no important part in the fading of the cells, the central pallor of the infarct appearing quite as soon in this series as in the others. The same is true of changes in the arterial conditions, for solution of the hemoglobin was quite as prominent a feature in the groups in which the artery was tied as in the group in which no vessels were ligated. It would appear, therefore, that plasmatic diffusion is responsible for the disappearance of this pigment.

Coincident with the disappearance of the hemoglobin, fibrin could be seen in the center of the infarcted area. It did not appear as heavy bands at any time, but was clearly distinguishable as a closely woven mesh of very fine threads with the typical nodes at the points of intersection. This applies equally well to kidney and spleen.

The degenerative changes in the parenchyma put in their appearance early, first as simple cloudy swelling, then desquamation, nuclear degeneration and finally at the end of about forty-eight hours, complete necrosis. All these changes reached their height in the central parts of the infarct before the marginal parts became affected, and also showed more markedly in the convoluted than in the other tubules. An interesting feature is the fact that the epithelium in the center of the infarct tended to break up into a finely granular mass, whereas that in the margin, slightly affected at first, suddenly underwent complete necrosis and the necrotic material filled the tubular spaces as a coarsely granular, almost hyaline mass. This marginal epithelium probably receives just sufficient nutrition by imbibition to keep it alive for a short time. When this nutrition fails, probably because of the pressure of the swelling infarct, the epithelium suddenly undergoes this peculiarly rapid necrosis.

In many of the infarcts, for the first twenty-four or forty-eight hours, a small number of tubules in the margin and, indeed, a few fairly deep in the infarct, retained their form and normal staining reactions, but at the end of this time, as the infarct became sharply defined, these tubules became less frequent and were very exceptional in older infarcts.

In the spleen, the degeneration of the cells of the pulp and follicles appeared first as nuclear pyknosis and fragmentation, which was especially evident in the center of the follicles. It extended rapidly, however, so as to involve the entire follicle and pulp. The protoplasm showed little demonstrable change until about forty-eight hours had elapsed, when there was distinct solution.

The interstitial tissue did not degenerate until late in the course of the condition. In the glomerular tufts necrosis was evident first in nuclear fragmentation and then in complete disappearance of nuclei and vascular loops. In the spleen, the trabeculæ lost their nuclei rather by lysis than by rhexis, and subsequently the whole mass of tissue lost its outlines.

Regeneration of the parenchyma in the kidney was evidenced only by the presence of mitotic figures, sometimes typical and sometimes atypical, in the tubules immediately surrounding the infarcted zone. In concordance with other workers, we were unable to demonstrate tubule formation. We were not able to demonstrate regenerative changes until a week had elapsed, and in the series in which artery, vein and ureteral circulation were cut off, the sections showed no mitoses whatever.

In the spleen, no evidence of regeneration was found. In both spleen and kidney, however, organization at the periphery of the infarcted areas was demonstrable at four days and was well under way at the end of one week. The newly-formed tissue in both organs was notably poor in new blood-vessels. In the kidney, variations in the growing connective tissue, under the differing circulatory conditions, was not noted.

In the series in which practically all the circulation was cut off, marked progressing fibrosis throughout the non-infarcted areas was present, but the growth immediately about the infarct was no greater than in the other series.

CONCLUSIONS

The most important conclusions are:

1. Regardless of general circulatory conditions, all infarcts of the kidney and spleen of the dog are first hyperemic, then hemorrhagic and finally become pale from coagulation necrosis.

2. The hyperemia of the early infarcts is, in a general way, proportional to the vascular pressure within the organ as a whole, and is not due to reflux of blood from the veins.

3. Conglutination of the red blood-corpuscles is the earliest demonstrable change in the blood of the infarct; removal of pigment from the infarcted area is probably due to plasmatic diffusion; definite fibrin formation appears relatively late in the course of the condition.

4. Necrosis progresses more rapidly in infarcts in those organs in which the general circulation is altered in some way (either from damming back of blood by vein ligation, or from cutting down arterial supply), than in organs in which the general circulation is normal.

5. The pallor of the white infarcts is due to decolorization of the contained conglutinated and coagulated blood; decolorization begins in a general way in the middle of the infarct and extends peripherally.

6. Organization progresses as well in organs in which the general circulation is diminished as in those in which the general circulation is normal.

7. Regeneration is seen, in the kidney, only in the occurrence of mitotic figures in the epithelium near the margin of the infarct; it is diminished by any decrease in the general circulation. Regeneration of the cells of the splenic pulp or follicles is not demonstrable previous to, or at the end of, one week.

THE IMPORTANCE OF MEDIASTINAL GLANDS

AND FAILURE TO MAKE PROPER DIAGNOSIS *

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This investigation, the results of which are shown below, was undertaken to determine the significance of mediastinal or bronchial glands in early or mistaken cases of tuberculosis of the right lung apex. Before considering the diagnosis of these glands and their connection with mistaken cases of right apical tuberculosis, it may be well, however, to examine anatomically the location of the bronchial glands and their relation to other lung structures and to review the literature on this subject.

As seen in the diagram (Fig. 1, Sukiennikow's[1]), the greater number of glands are situated on the right and along the main bronchial vessels; there is also greater massing of glands on the right as well as chain formation. Normally, we also find that the right bronchus branches off at a higher point than the left, corresponding to the fifth dorsal vertebra (Gray[2]); it is also shorter, wider and more vertical than the left bronchus. The right bronchus apparently is also a more direct continuation of the trachea than the left (Gray). Sukiennikow, describing the development of the tracheobronchial and the bronchopulmonary lymph-glands, concludes that the appearance and the grouping of these glands have a fixed regularity of massing, and that those situated in the angle of the bronchi are bound there. It is also well to remember that the cervical lymph-nodes are not anatomically connected with the tracheobronchial lymph-nodes (Bartel[3]), so that these glands are excluded from our consideration.

In 1889 Krönig practiced a method of percussion of the apices, which determined for him the existence of a simple non-tuberculous collapse induration of the right lung apex; and in 1907 he issued a treatise[4] wherein he set forth his studies regarding the false dulness obtained at the right lung apex, usually over the clavicle and spine which had a great similarity to incipient tuberculosis. Associated with this was a residual light bronchial catarrh, cough, expectoration, etc. His explanation was a physiologic one, namely, an impaired infiltration caused by adenoid growths and catarrhal mucous membranes, and that, with a greater inspiration of dust-laden air on the right, an induration resulted at the right apex and later a collapse of that portion. The bronchial breathing is slightly increased, but varies very little from the normal. In 1908 Blumel[5] substantiated these findings of Krönig. On the examination of 1,700 referred tuberculous patients, eighty-five did not have tuberculosis, and twenty-eight of these were considered as cases of collapse-induration. Wolff-Eisner,[6] in 1909, with the aid of conjunctival tuberculin reactions, demonstrated the same thing in several cases. Bing,[7] in 1910, in the examination of a great many cases by means of a sagittal method of percussion like Goldscheider's[8] found another cause for false dulness at the right apex. This dulness occurs in older children of tuberculous families. He found by percussion either a slight or an increased dulness, but with auscultation nothing very definite. These findings covered a much less surface than his cases of apical infiltration, and the harsh breathing usually found in such cases was virtually absent. On a closer examination and by lighter sagittal percussion with firm pleximeter pressure, especially in the intercostal spaces, which brings one closer to the lung, he concluded that he was dealing with enlarged bronchial glands. According to Bing, no cases were found of Krönig's retraction dulness, and he concludes that it should not be considered unless all evidence of adenopathy has been ruled out, and that wherever swelling of the bronchial glands occurs, there will be found a false dulness at the upper half of the right lung apex. This is slighter on the inner and greater on the outer side, thus differentiated from true infiltration dulness by position and by Goldscheider's method of sagittal percussion which emphasizes the median line and upper borders of the lung, front and back surfaces with the accompanying dulness over sternum and back. Bing's explanation includes the statement that by the swelling of the bronchial glands, more or less air-spaces are shut off, and that, as a result of this, dulness can also be demonstrated at the junction of the second rib and the sternum, along the right of the sternum, and at the back from the third to the sixth rib. Figure 2 is made from one of his cases.

Bing declares that should one percuss by Krönig's more or less vertical method, a clear sounding zone or isthmus would be found above the upper border of the lung. In disease processes this zone is decreased and the

* From the *X*-Ray Department, Boston City Hospital.

1. Sukiennikow: Berl. klin. Wchnschr., 1903, xl, 316, 347, 369.
2. Gray: Illinois Med. Jour., 1908, xiv, 54.
3. Bartel: Sixth Internat. Tubere. Cong., Vienna, 1907, p. 141.
4. Krönig: Deutsche Klin., Berlin, 1907, xi, 612.
5. Blumel: München. med. Wchnschr., 1908, lv, 1573.
6. Wolff-Eisner: Klin., 1909, v, 890.
7. Bing: Berl. klin. Wchnschr., 1910, xlvii, 376.
8. Goldscheider: Berl. klin. Wchnschr., 1907, xliv, 1267, 1309.

percussion sound diminished, but if his method of sagittal percussion is used, no actual dulness is found, which is present only with the vertical method. It is apparent, therefore, that a dulness at the apex in the median line is due to an infiltration. If found more lateral and below the apex, in first or second intercostal space, by sagittal percussion, it is due to a more or less solid process occurring lower down in the lung. Consequently, it may be dependent on the swelling of glands and verified by dulness over the sternum at the first intercostal space. Some of Bing's cases were corroborated by *x*-ray examination. These findings do not apply to cases in which there is more muscular development on the right side or any other physical changes.

D'Espine,[9] in 1907, described an auscultation sign which some investigators claim of value, in determining the presence of tuberculous bronchial glands in children, namely, the whispered voice with a bronchial ring heard at the level of the spinous process of the seventh cervical vertebra and over the first dorsal vertebra. This, he explains, is due to the enlarged ganglions which surround the lower part of the trachea and the bifurcation of the bronchi. In a number of non-tuberculous cases (bronchopneumonia with measles and four cases of grip), the sound was present from the seventh cervical and over the first four dorsal vertebræ. Autopsy showed that in some cases adenopathy was present. He therefore emphasizes that where the sound persists for five or six months and longer, there can be no doubt of the presence of enlarged bronchial glands.

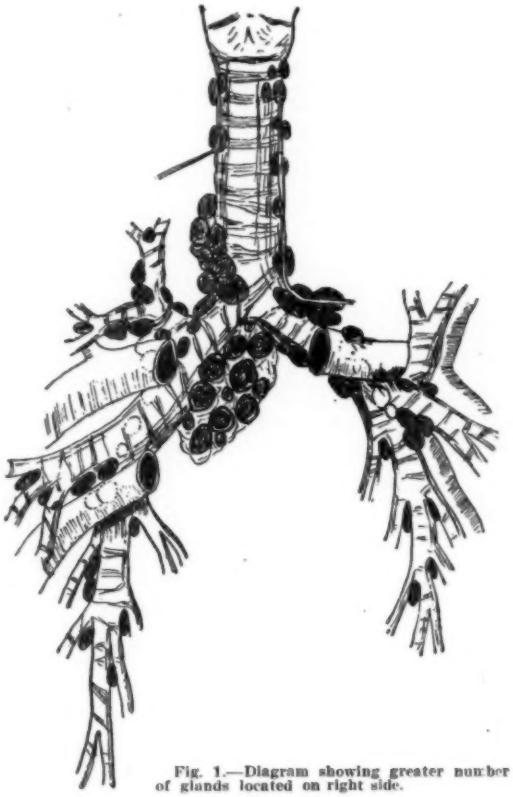

Fig. 1.—Diagram showing greater number of glands located on right side.

Gray, in 1908, found with auscultation according to D'Espine's method over the vertebral column the bronchial respiratory murmur. He emphasizes that in examining children in auscultation certain voices are husky and lacking in resonance owing to laryngeal disease and that other tracheal sounds may also predominate; but he does find that vertebræ auscultation offers certain almost constant findings. Sokolowski[10] has found in enlarged gland cases that the expiration is prolonged and more intense and inspiration rougher, especially between the shoulder blades. Stoll,[11] in the examination of 175 children for tuberculosis of the bronchial glands, obtained some results which, although not conclusive, are interesting. He found that dulness over the sternum or in the inner third of the first left intercostal space was present in forty-one cases, of which 49 per cent. reacted to tuberculin. On percussion of the vertebra spines, at or below the fifth dorsal, positive signs were present in nine out of forty cases; all nine reacted to tuberculin, and the seven adults, all of whom had other signs of bronchial gland enlargement, had either vertebral or paravertebral dulness. Vertebral bronchophony was present in eighty out of 168 children and sixty-six of the eighty reacted to tuberculin, and in twenty-four adults who had vertebral bronchophony 80 per cent. gave positive tuberculin reaction. Roberts[12] says that in a fair proportion of cases glands do not give rise to any symptoms or they may be obscured by existing lung trouble, but when the bronchial glands are affected and attain a sufficient size, the character of the breathing and cough will reveal more or less obstruction of the main air passages or nerve irritation; and it is to the phenomena thus originated that special attention must be paid

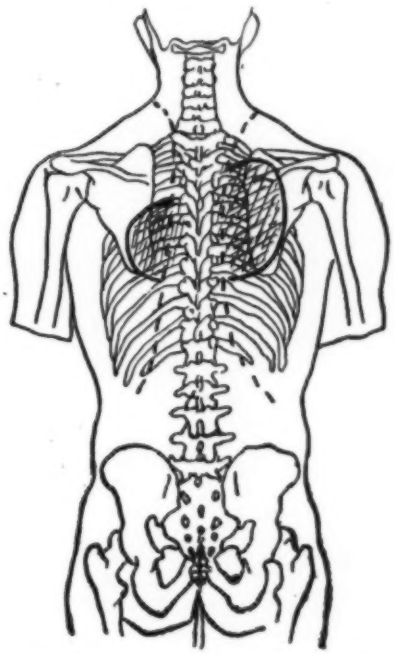

Fig. 2.—Diagram showing area of gland dulness and lung outline.

9. D'Espine: Bull. de l'Acad. de méd., Paris, 1907, January, p. 142.

10. Sokolowski: Klinik der Brustkrankheiten, Berlin, 1906.
11. Stoll: Tr. Nat. Assn. Study and Prev. of Tuberc., Sixth Ann. Meet., p. 252.
12. Roberts: Allbutt and Rolleston System of Medicine, v, pp. 595-669.

in early diagnosis, particularly in children. Numerous other signs, such as enlargement of the veins of the chest, pains, hiccough, cough, etc., are fully mentioned in literature (Sahli,[13] Osler,[14] Roberts, and others), but, in the opinion of investigators, they are secondary considerations to auscultation and percussion. It is apparent, however, from the foregoing that when the tracheovertebral and bronchovertebral spaces are occupied by glands, they may then become sound transmitting. When on examination the patient bends forward, the structures are in close proximity to the vertebral column and on auscultation and percussion disease conditions are more easily determined. It is also clear, from an anatomic-physiologic point of view, that if inflammatory conditions or pressure are present on the bronchi, the right lung and apex would more easily convey any abnormal sound that is produced.

TUBERCULIN REACTION

In the past few years discussion has been caused by the fact that tuberculosis reactions were obtained in so-called negative tuberculosis cases. Hamman and Wolman[15] reported that in non-tuberculous cases, 57 per cent. reacted to the skin tuberculin test and 83 per cent. reacted in the doubtful cases. In seventy-seven cases of Stoll's, 57 per cent. reacted to tuberculin, and in sixty-nine cases not classified 32 per cent. gave reactions. These were from a total of 175 children whom he studied to prove the reliability of certain signs said to be indicative of tuberculosis of the endothoracic glands. Sachs[16] concludes, in discussing the value of local tuberculin reactions, that the verdict of to-day is that a positive reaction following the local application of tuberculin signifies the existence of a tuberculous focus somewhere in the organism, without giving a definite idea of the active or latent character of the process. It will be sufficiently plausible, then, to suggest that a great many patients may have had tuberculous thoracic glands.

Pathologically, it is obvious that in considering enlarged glands which occur in the chest we are dealing with no one disease class. In all likelihood, tuberculosis is in the majority of cases responsible for their enlargement. But the glands alone may be involved, either in an acute or subacute stage, or inflammation of neighboring structures may have been extended to them. The tracheobronchial or mediastinal glands act as filters in which lodge the various foreign particles which escape the normal phagocytes of bronchi and lungs (Osler). It has been pointed out by various writers that catarrh of the mucous membranes predisposes to disease of the mediastinal glands. The lymph tissues and possibly the tonsils are so impaired that the bacteria find their way down until taken up by the lymphatic glands. Should spontaneous healing not take place, which Osler states happens too often, acute tuberculosis results. These glands may enlarge to such an extent that they produce pressure symptoms (Osler, Roberts, Sokolowski and others). The bronchi, and especially the right bronchus, may be compressed to such a degree that abnormal breathing sounds are caused, which may arouse suspicions of apical tuberculosis. Other symptoms, of course, may arise and in one case examined at the City Hospital there was reason to believe that pressure on the esophagus, giving rise to stricture signs, was due to enlarged mediastinal glands (Osler). Suppuration of the glands and perforation of adjacent vessels is not uncommon (Sokolowski). Abscess may occur (Hare[17]) and is not uncommon. It was found in a collection of mediastinal disease cases that the anterior mediastinum was far more frequently affected than the other two spaces and that the disease, whatever it may be, occurs more among males than females (Roberts, Hare). In a list of nonsuppurative mediastinitis Hare gives only two cases in which the glands were affected, one occurring in the middle and the other in the posterior mediastinum; this was from a total of sixteen cases. Of 104 cases of miscellaneous diseases of the mediastinum, fifteen cases were of glands.

The question of tuberculosis of the glands and whether primarily infected has been broadly argued by most pathologists. Wollstein,[18] in a study of the distribution of the tuberculous lesions in 185 infants and young children (post mortem) under 3 years of age, showed that 16.4 per cent. gave tuberculosis of one or more organs. In thirteen cases the lungs and bronchial nodes were alone involved and in one case the bronchial lymph-nodes were alone involved; this was at the root of the right lung.

Considering the bronchial nodes alone, there occurred in 131 cases tubercles with cheesy degeneration, in three cases suppuration and in six cases calcareous degeneration. In thirty-eight cases the mediastinal lymph-nodes were markedly affected.

What is especially interesting for consideration is that ninety-seven cases gave the largest bronchial lymph-nodes on the right side, compared with thirty-four cases on the left side. This is naturally explained by the previously stated fact that the right main bronchus is shorter and wider and a more direct continuation of the trachea, so that inspiration is facilitated in the right lung. There appears to be no question as to the primary affection of the glands (Roberts), but whether any previous disease predisposes to this is to be considered, and Roberts states that it is a question whether these glands are contracted glands of a previous disease or the early affection of a present disease. He also believes that heredity is a factor in primary tuberculosis of the glands.

Tendeloo, in his article on the channels of infection,[19] decidedly states that if there is tuberculosis of the bronchial lymphatic glands without tuberculosis elsewhere, it has occurred from the bacilli coming from the lung. He also states that the primary tuberculosis foci occur not in the apex but near the apex and the vertebral column. He more precisely says that the primary foci occur most in the peribronchial, perivascular tissue, concluding, however, that it is possible that bacilli go from the pulmonary lymphatics either directly or after having infected one or more peribronchial lymphatic glands, then from these glands elsewhere in the lung lymphatics. Hare's statement is that the tubercles may arise in the glands themselves, or become secondary growths, owing to primary disease of the lung or pleura, and in many cases at the post-mortem the tubercular involvement is so general that it is impossible to decide as to the primary seat.

In 151 cases of healed tuberculosis (Adami and McCrae[20]), the thoracic glands were involved in forty-five cases and in these the group of glands at the lung root predominated thirty-eight times, and where only a

13. Sahli: Diagnostic Methods.
14. Osler: Practice of Medicine.
15. Hamman and Wolman: Tr. Nat. Assn. Stud. and Prev. of Tuberc., Sixth Ann. Meet., p. 240.
16. Sachs: Tr. Nat. Assn. Study and Prev. of Tuberc., Sixth Ann. Meet., p. 203
17. Hare: Mediastinal Diseases, 1889.
18. Wollstein: Arch. Int. Med., 1909, iii, 221.
19. Tendeloo: Sixth Internat. Cong. Tuberc., 1908, i, 86.
20. Adami and McCrea: Tr. Sixth Internat. Cong. Tuberc., 1908, i, 325.

single site was found it was twenty-three times in the lung root group. In the latent tuberculosis cases (93), the thoracic nodes were involved thirty-five times and eighteen times in combination with disease of the lungs. The relation of pleural adhesions to healed and latent tuberculosis gave eleven cases in which tuberculosis existed in the thoracic nodes and six in combination with disease of the lungs.

In considering the sites of early tuberculosis infection, Adami and McCrae show that the thoracic nodes were affected in 33 per cent., which is second to the lungs in frequency of infection. In another group of generalized tuberculosis the figures are still more interesting from our point of view, in that the lungs were involved only in 14 per cent. more (that is, in 95 per cent.) than in the lymph-nodes which showed 81 per cent., or thirty-five cases; of this number all but two cases were in the glands of the thorax. In connection with, and under the head of, tuberculous infection of other organs, there are forty cases given of involvement of the thoracic nodes.

From the foregoing figures it can, therefore, be accepted that tuberculosis of the thoracic lymph-nodes occurs next in frequency to tuberculosis of the lungs, and that the disease does occur alone in these glands. It is also consistent to say that since there are more glands on the right side and since physiologically or anatomically the structural position of the bronchi is such that disease in aspirated infection is more likely to occur on that side, there is all the more reason to believe that tuberculosis of the right bronchial or peribronchial lymph-nodes can be confused with the diagnosis of tuberculosis of the right apex. This contention, that many cases of questionable tuberculosis of the right apex is due to disease in the glands, is strengthened if Adami and McCrae's findings are accepted—that tuberculosis does not occur more often in the right apex—and also Krönig's reports on *Collaps-Induratie* of the right apex in which the symptoms closely resemble those of early infiltration. Bing also emphasizes the difference between early tuberculosis of the right apex and the enlargement of thoracic glands. Sokolowski states that the enlarged glands are mostly found post mortem and as such have little significance.

RESULTS OF INVESTIGATION

The physical and fluoroscopic examination of the chests of 620 patients at the Boston City Hospital has demonstrated the common failure to recognize accurately the presence of mediastinal or bronchial glands. The majority of these patients were referred to the *x*-ray department to ascertain or verify the presence of tuberculosis of the lungs. In the light of recent statements made concerning the percussion dulness found at the right lung apex (Krönig, Bing), the results shown in the accompanying tables may be interesting.

Of these 620 patients examined by fluoroscope, 147 showed the presence of glands in the mediastinum or at the root of the lungs. The majority, as stated, were either tuberculous or had signs in the chest which were thought might be tuberculosis; most patients had several physical examinations. Of these 147 patients, in only two did the question arise of the probability of enlarged bronchial or posttracheal lymph-glands.

It is conceded that in most of these cases the glands were not large enough to cause marked disturbances, but considering that there were a number of cases of questionable right apical tuberculosis, one may presume that in the cases proving negative by fluoroscope, the glands may have given rise to the signs which were interpreted as early apical tuberculosis.

In a large number of early apical tuberculosis cases examined at the Boston City Hospital and at the Boston Consumptives Hospital it was noted that a certain percentage proved negative, while among these patients, the majority of whom were children, many reacted to tuberculin. There was no idea at that time of examining for thoracic glands, but as a result of this interesting study the indefinite thought occurred whether enlarged glands by pressure or otherwise might not be the cause of the questionable dulness at the right apex, with the sharp or rough inspiration, etc. Since then definite statements

TABLE 1.—CLINICAL DIAGNOSIS

100	cases	clinically	suspected	of	pulmonary tuberculosis.
24	"	"	diagnosed	as	" "
8	"	"	"	"	bronchitis.
7	"	"	"	"	pneumonia.
5	"	"	"	"	probable aneurism.
4	"	"	"	"	cardiac disease.
2	"	"	"	"	asthma.
2	"	"	"	"	influenza.
2	"	"	"	"	pleurisy.
1	case	"	"	"	bronchiectasis.
1	"	"	"	"	abscess.
3	cases	no diagnosis.			
159					
−12	cases	included with two diagnoses.			
147	cases.				

TABLE 2.—DIAGNOSIS BY *X*-RAYS

25	cases	tuberculosis	of	both	apices	showed	glands	on	both	sides	23	times
35	"	"	"	"	"	"	"	"	right	side	8	"
35	"	"	"	"	"	"	"	"	left	"	4	"
13	"	"	"	"	sides	"	"	"	both	sides	11	"
13	"	"	"	"	"	"	"	"	right	side	1	time
13	"	"	"	"	"	"	"	"	left	"	1	"
25	"	"	in one apex with			"	"	"	both	sides	13	times
25	"	"	? of disease			"	"	"	right	side	9	"
25	"	"	in other apex			"	"	"	left	"	3	"
28	"	"	of right apex			"	"	"	both	sides	9	"
28	"	"	"	"	"	"	"	"	right	side	15	"
28	"	"	"	"	"	"	"	"	left	"	4	"
4	"	"	"	left	apex	"	"	"	both	sides	2	"
4	"	"	"	"	"	"	"	"	right	side	1	time
4	"	"	"	"	"	"	"	"	left	"	1	"
14	"	"	apical, either side			"	"	"	both	sides	8	times
14	"	"	"	"	"	"	"	"	right	side	4	"
14	"	"	"	"	"	"	"	"	left	"	2	"
11	"	all other diseases				"	"	"	both	sides	4	"
11	"	"	"	"		"	"	"	right	side	6	"
11	"	"	"			"	"	"	left	"	1	time
17	"	negative				"	"	"	both	sides	9	times
17	"	"				"	"	"	right	side	7	"
17	"	"				"	"	"	left	"	1	time

TABLE 3.—POSITION AND NUMBER OF GLANDS

94	cases	had	two or more glands.
53	"	"	single gland.
50	"	"	glands on right side.
44	"	"	" " both sides.
36	"	"	in mediastinum (above lung roots).
17	"	"	on left side.

TABLE 4.—100 MALE, 47 FEMALE PATIENTS

6	patients	aged	from	1	to	10	years.
21	"	"	"	11	"	20	"
42	"	"	"	21	"	30	"
34	"	"	"	31	"	40	"
28	"	"	"	41	"	50	"
8	"	"	"	51	"	60	"
6	"	"	"	61	"	70	"
2	"	ages not given.					
147	total.						

TABLE 5.—OCCUPATIONS OF PATIENTS

Bakers, cooks, etc.	5
Bartenders, waiters, barbers, etc.	5
Factory workers	11
Farmers, messengers, etc.	4
Firemen, machinists, metal workers, etc.	12
House, home, etc.	26
Laborers	21
Physicians, nurses, etc.	5
Printers	4
Salesmen, clerks, etc.	8
School	18
Tailor, seamstress, laundry, etc.	13
Teamsters, junk-dealers, etc.	8
Not given	7
Total number of patients	147

have been made, as already quoted, by Bing and others that dulness at the right apex can be caused by the swelling of bronchial glands.

In 100 cases of this investigation of questionable tuberculosis, it was shown that in fifteen there was no tuberculosis and of twenty-four diagnosed as tuberculosis, seventeen proved negative. In these thirty-two negative patients the glands were shown to be enlarged. In eighty patients of 100 diagnosed as questionable and in twenty-four diagnosed as positive cases the apices were the parts under consideration. Of the eighty, the right apex was questioned in thirty-two, the left in eight and both in forty cases. In five cases of enlarged questionable aneurysm of the aorta, there proved to be enlarged glands present and no aneurysm. Therefore, we have apparently found dulness in a number of cases at the apices and especially at the right apex where no congestion or infiltration was found, but where enlarged thoracic or bronchial glands were evident. Considering that of 147 patients with questionable or positive cases of tuberculosis or other diseases, there were glands on the right side in fifty, on the left in seventeen, on both sides in forty-four and in the mediastinum—that is glands above the roots of the lungs—in thirty-six cases, we can state that glands do occur more often on the right side than on the left and in conjunction with the right apex dulness. In the examination of these cases it was difficult to determine the presence of glands or their number when there was either tuberculosis, congestion or some such disease extending over a great part of the chest and consequently overshadowing the glands. It does not, therefore, follow that when glands have been seen on the left side, and not on the right, that they may not, however, be present there also. It is a question also whether the statement which Bing makes that bronchial glands occur mostly in young children is absolutely correct. In this series of cases, 118 patients were adults, that is, above 20 years of age. It is a more difficult matter to percuss an adult chest for bronchial glands than a child's. In the adult chest we must take into account development due to occupation, habits, etc. On the other hand, children show a so-called physiologic dulness at the right apex which may prejudice one in favor of bronchial glands. In fluoroscopic examinations a child's chest gives a greater opportunity to discover bronchial glands than an adult's. Still, of 145 patients, only twenty-seven with thoracic glands were below 20 years of age. Another group of cases, which is not included in this present paper, but which may have bearing on the consideration of bronchial or mediastinal glands, is that in which there is obscurity of the space behind the heart and aortic vessels. On account of the more questionable nature of this obscurity, these cases were not investigated.

Sukiennikow states that the prevailing position of the lymph glands is anterolateral, especially the tracheobronchial group, and gives this as a reason for the difficulty that is encountered in diagnosing them, when enlarged, by percussion. Osler's statement is broader still. He says that unless the glands are large enough to cause compression of lung tissue, he doubts whether the ordinary bronchial adenopathy ever can be determined by percussion in the upper interscapular region.

One other difficulty was the inability to tell in certain obscure cases whether a gland was single or whether two or three were adherent. From our anatomic knowledge, it is very likely that in the case of bronchial glands there were several instead of one.

Usually, where the glands appeared on both sides the apices were also affected, and in a large number of questionable cases of tuberculosis the glands were either single or on one side.

The conclusion is that in a number of cases the glands were enlarged where tuberculosis was either not present or suspected, and were of sufficient importance to either produce certain physical signs confused with tuberculosis or were the probable cause of a tuberculin reaction.

CONCLUSIONS

1. Enlarged glands occur more frequently on the right side than on the left.

2. Enlarged glands may cause the signs which are often considered as those of early apical tuberculosis. This has been explained in anatomic and physiologic terms.

3. Enlarged glands occur in both tuberculous and nontuberculous patients and probably occur as frequently in adults as in children.

4. Positive tuberculin reactions may, therefore, in negative tuberculous cases, be due to enlarged glands in the mediastinum, etc., when apical signs are not present.

5. The results of this investigation demonstrate the common failure to diagnose the presence of mediastinal or bronchial glands, and show the importance of emphasizing the more careful examination of so-called early tuberculosis cases.

In addition to the articles previously cited the following references will be found of interest:

Bosman: Nederl. Tijdschr. v. Geneesk., No. 15, 1910.
Walsh: Tr. Nat. Assn. Study and Prev. of Tuberc., Sixth Ann. Meet., pp. 166, 324.

2 Arlington Street.

IMPROVED TECHNIC OF THE THIERSCH GRAFT FOLLOWING THE RADICAL EAR OPERATION *

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In the preliminary report of the improved technic of the Thiersch graft following the radical mastoid operation,[1] I reported a series of eighteen cases, in which graft was applied four days following operation, and said that never before had such a series of cases been brought to healing in such a short time and that never before had the hearing been so uniformly good (Table 1).

I shall here report a series of twelve cases in which I operated. Graft was applied at the time of operation. This report will be even better than the former, besides eliminating a second operation that consumes almost as much time as the original mastoid operation, while the original operation is only lengthened about fifteen minutes. This of itself, I consider a great boon for the procedure; in fact, it makes the radical ear operation a simple, concise and precise operative procedure, attended with no risk to life whatsoever, providing the cochlea and canals are intact (Table 2).

The further improvement of the technic will consist in a more thorough removal of the mucous membrane of the tube, the mucous membrane of the inferior part of

* Read in the Section on Laryngology, Otology and Rhinology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Ann. Otol., Rhinol. and Laryngol., March, 1911.

the tympanic cavity, and the cutting away of the inferior bony meatus, so that it is absolutely on a plane with the floor of the tympanic cavity. I shall repeat the detailed technic of this operative procedure.

Every individual cell is destroyed until hard bone is encountered, or the dura, sinus or nerve uncovered. This final destruction of cancelous bone is best accomplished by me with a hand burr; it can be done with a burr driven by electricity, however, I prefer such burr for the bone of greater density. It is very essential that all the uneven surfaces be made perfectly smooth.

The outer part of the bony meatus must be removed sufficiently to be on a horizontal plane with the floor of the tympanic cavity. The posterior bony wall must be cut down to the floor of the newly-made bony meatus. By this procedure more room is gained and the pocket which was formed by the tympanic cavity has been eliminated. In the removal of the posterior bony meatus

Everything said so far, while absolutely important in every radical operation, is much more important when Thiersch grafts are to be applied, as any infection that may remain in the bone will ultimately destroy the graft and one will fail to accomplish what he set out to do.

The Neumann plastic should be made in preference to all others for this particular procedure, the upper and lower flap sutured in place and the point of the V sutured to the auricle. The sutures to be used in holding the V part of the plastic should be catgut. The sutures for the upper and lower flap had better be catgut, as the use of other sutures, if allowed to remain, may or may not cause trouble in the after treatment of the case.

At this time I use hot saline solution as a hemostatic agent inspecting the cavity from time to time; finally, to reassure myself, I use peroxid of hydrogen several times. When I am satisfied beyond a question of doubt that everything is away, I put in gauze saturated with

TABLE 1.—EIGHTEEN CASES OF RADICAL EAR OPERATION BY IMPROVED THIERSCH GRAFT

Case No.	Age	Sex	Discharge	Operative Findings	Hearing Before and After Operation		Duration of After-Treatment (weeks)*
					Before	After	
104	26	F.	Childhood.	Cholesteatoma.	Whisper, 6 ins.	Whisper, 6 ft.	Six.
105	14	M.	Two yrs.	Cholesteatoma.	Speech, water, 6 ft.	Speech, water, 15 ft.	Four.
107	28	M.	Childhood.	Cholesteatoma.	Whisper, 3 ft.	Whisper, 3 ft.	Six.
108	19	F.	Childhood.	Cholesteatoma.	Whis'r, water, 12 ft.	Whis'r, water, 26 ft.	Four.
109	10	M.	Childhood.	Cholesteatoma.	Whisper, 1 ft.	Whisper, 26 ft.	Four.
110	14	M.	Childhood.	Cholesteatoma.	Whisper, 1 ft.	Whisper, 25 ft.	Four.
111	25	M.	Two yrs.	Cholesteatoma.	Whis'r, paper, 3 ins.	Whisper, 6 ft.	Six.
113	33	F.	Childhood.	Cholesteatoma.	Whis'r, paper, 3 ft.	Whis'r, paper, 20 ft.	Three.
115	26	M.	One yr.	Cholesteatoma.	Whis'r, paper, 15 ft.	Whis'r, paper, 26 ft.	Four.
117	16	M.	Childhood.	Caries.	Whis'r, paper, 1 ft.	Whis'r, paper, 6 ft.	Four.
118	12	M.	Five yrs.	Caries.	Speech, 3 ft.	Whis'r, chair, 25 ft.	Three.
119	16	M.	Two yrs.	Caries.	Whisper, 25 ft.	Whisper, 3 ft.	Four.
120	9	M.	Seven yrs.	Cholesteatoma.	Whisper, 1 ft.	Whisper, 6 ft.	Three.
121	29	F.	Childhood.	Caries.	Whisper, 6 ins.	Speech, 1 ft.	Three.
122	29	F.	Childhood.	Caries.	Whisper, 3 ft.	Speech, 3 ft.	Four.
123	4	F.	Three and one-half yrs.	Cholesteatoma.		Good.	Four.
124	30	M.	Childhood.	Cholesteatoma.	Whis'r, chair, 2 ft.	Whis'r, chair, 15 ft.	Five.
125	18	F.	Ten yrs.	Cholesteatoma.	Speech, 2 ft.	Whisper, 25 ft.	Four.

Duration of after-treatment:

In 4 cases 3 weeks. In 1 case 5 weeks.
In 10 cases 4 weeks. In 3 cases 6 weeks.

Hearing, following operation, for whisper:

In 6 cases 25 feet or more. In 2 remained the same.
In 3 cases 15 feet or more. In 1 case could not be measured, but good.
In 3 cases 6 feet.

* The duration of the after-treatment dates from the day of the radical mastoid operation and not from the day of the graft, which was four days later.

TABLE 2.—TWELVE CASES OF RADICAL EAR OPERATION

Case No.	Age	Sex	Duration	Operative Findings.	Hearing		Duration of After-Treatment (weeks)
					Before	After	
127	21	M.	Childhood.	Caries.	Whisper.	Improved.	Three.
128	21	M.	Childhood.	Caries.	Whisper, 3 ft.	Improved.	Two.
129	31	M.	Childhood.	Caries.	Whisper, 6 ins.	Whisper, 25 ft.	Ten.
130	38	M.	Five yrs.	Caries.	Whisper, 6 ins.	Whisper, 18 ft.	Six.
131	20	F.	Childhood.	Caries.	Whisper, 3 ins.	Remnants.	Four.
132	46	M.	Childhood.	Caries.	Whisper, 2 ins.	Whisper, 15 ft.	Four.
133	34	F.	Fourteen yrs.	Negative.	Whisper, 3 ft.	Whisper, 26 ft.	Three and one-half.
134	17	M.	Eight yrs.	Caries.	Whisper, 6 ins.	Whisper, 6 ft.	Three and one-quar.
135	9	M.	Three yrs.	Caries.	Whisper, 1 in.	Whisper, 4 ft.	Three and one-half.
136	7	F.	Infancy.	Caries.	Whisper, 3 ft.	Whisper, 25 ft.	Four.
137	17	M.	One yr.	Caries.	Whisper, 6 ft.	Whisper, 26 ft.	Three.
138	9	M.	Childhood.	Caries.	Whisper, 3 ft.	Not made.	Three.

and facial spur, great care must be exercised in not injuring the facial nerve. This is best avoided by chiseling the wall away with large chisels and working parallel to the nerve, so that in the event that the nerve is uncovered, it would not be cut. This particular point will enable the operator to remove more bone than any other with more safety to the facial; in fact, the facial will not be cut by an experienced operator.

The mucous membrane of the tympanic cavity must be entirely removed. I literally mean that after a very thorough inspection, none can be detected, at this place it will be necessary in most cases to use a hemostatic agent of some kind, as hot saline solution, hydrogen peroxid or epinephrin. Most careful attention must be directed to the tube in order to remove the mucous membrane thoroughly.

The tympanic wall should be so thoroughly removed by chisel and made smooth by burrs, so that the small searchers of Jansen's will not be arrested.

epinephrin (P. D. & Co.), this gauze is held in the cavity under pressure by an assistant, while the grafts are being prepared. At the time I begin my preparation of the ear plastic, the nurses are preparing the leg or part from which the grafts are to be taken. In this preparation, mercury bichlorid has never been used. Sterile salt solution used in excess, following all the other aseptic procedures.

I try to get about three or four grafts ½ inch wide by 1½ inches long, and some smaller ones, ¼ inch by ½ inch. Some of the grafts may be lost in preparation or in applying them.

The Jansen spatula is used, grafts are taken from the razor directly to the spatula, all edges straightened and put aside for use. When grafts are in readiness the epinephrin tampon is removed from the ear. The cavity will be found to be absolutely dry and if not, more epinepbrin must be used; the cavity must be free from oozing blood or the grafts will not adhere.

The first graft is fastened with a searcher into the tube, bringing it out over the floor of the tympanic cavity posteriorly; second superior to the first, brought back over facial into mastoid cavity. The third usually covers the remaining wall of the attic and antrum. The three which have been used are the larger ones. The uncovered areas that are left are covered by the remaining grafts, the one being selected that will cover the denuded area best. Small pledgets of cotton are now used to fix the grafts; they must be so small that they do not touch either surface while being put in place The first one is put over and into the tube, the second firmly applied to the posterior inferior quadrant, the next over the stapes and so on until all the grafts are held well in place, so they will not be materially disturbed when a dry tampon is introduced. The size of this tampon will correspond to a piece of gauze 2 or 4 inches square. After the dry gauze, a similar piece of gauze is saturated with 0.5 per cent. solution of phenol (carbolic acid) in paraffin oil, U. S. P. (especially sterilized in 10 c.c. ampoules),[1] and packed within the mastoid cavity; after this a similar piece, larger or smaller as the occasion may demand, is used to fill the entire cavity made by the operation. The posterior wound is now closed in the usual manner. It will be found that an additional tampon by way of the meatus will assist materially in holding the plastic in the way intended, resulting in a very large meatus with cut surfaces all within the ear. This materially adds to the comfort of the patient, as well as preventing a contracted meatus. The usual outside dressing is used. The ear tampons are removed on the fourth day. If there is any difficulty or pain in the removal of the tampons, contrary to the ordinary teachings, hydrogen peroxid can be used in excess to soften and loosen them; this procedure will also aid in getting rid of the blood and stop bleeding, so that the small cotton fasteners that were put in to hold the grafts in place can be seen and taken away. I wish to add that it is quite important to know the number of small cotton balls that have been put in the ear to hold the grafts, otherwise one may be left which will cause trouble sooner or later.

In 50 per cent. of the cases one will look into a white cavity; in fact, all of them are white if one takes the time to stop the bleeding that comes from the inner surface of the soft parts which have been sutured and could not be covered with graft.

This is the improved technic of the Thiersch graft in the radical ear operation.

In fact, a graft never adheres to the tampons to be torn from its attachments. In some of the cases, the outer layer of epidermis will loosen in ten days or two weeks after they have been applied; they will always leave a delicate epidermis that will harden in a very short time. I hardly know how to account for the fact that, in some cases, the entire graft remains in place, while in others the outer layer comes away. The only explanation that I can offer is that, in some instances, the graft is too thick. This does not seem to be serious, however, as the cases heal in about the same time. Occasionally it will happen that granulation tissue makes its appearance when the edges of the graft are not in perfect apposition. They are very easily destroyed with the ring knife. At the following dressing, the denuded area will be completely dermatized.

Occasionally, excessive granulation tissue makes its appearance in the region of the plastic. This is removed with curet and packed tight with gauze saturated with sterile liquid petrolatum. Contrary to the teachings of to-day, bichlorid of mercury is used to irrigate the cavity. This is necessary where there is an unusual amount of pus or odor from secretion. In other instances where there is more debris than should be, I always irrigate with the intratympanic cannula and under inspection, so that the force of the stream is directed to the particular spot that requires attention. I also irrigate with normal salt solution and boracic acid.

As has been said before, the oil dressing is removed in four days, or sooner if necessary. In two days a second dressing is made which includes an irrigation of bichlorid of mercury, 1-3000, and from this on, dressed daily until complete recovery. The particular reason for the bichlorid at the second dressing is to remove disagreeable odor, debris, or to see with more accuracy that all the cotton tampons have been removed.

The final procedure of every dressing is a thorough drying of the ear. After this, pulverized boracic acid is blown into the ear, single small pieces of gauze, ½ inch square, introduced into the ear, with a small roll of gauze fitting snugly into the outer meatus. As a rule, the bandage is left off in from ten to twelve days after the operation.

The majority of this series of twelve cases have been more or less complicated because of prior operations or existing labyrinth complications that added somewhat to the risk of operation. Some of the cases are quite out of the ordinary. In many of the cases, healthy dura was uncovered by the chisel and grafts used as described. In two instances dura with a granulating surface presented, the grafts covered everything but the granulating surface of the dura.

In conclusion, I wish to state that all cases of chronic suppurative otitis media (chronic after one year duration, nose and throat in order) are dangerous to the individual; all patients should be operated on, and all will recover if properly operated.

Second, the hearing will be improved in all cases, providing that the internal ear is intact as shown by the tuning fork examination.

Third, there is no danger associated with the operation provided that the labyrinth is intact. This latter statement is based on approximately two hundred radical mastoid operations.

CASE REPORTS

CASE 127.—*Patient.*—A man, aged 21, a laborer, had had discharge from the right ear since childhood. At the age of 15 the ear was operated for the first time, and he had three different operations since. He came to me with an acute exacerbation of a chronic suppuration, pain over the whole side of the head, especially over tip of the mastoid. For three weeks previously he had had repeated attacks of vertigo.

Examination.—Head on diseased side was sensitive to touch and especially over the tip of the mastoid. Temperature 101 F., surface temperature of mastoid more than that of other side. The mastoid cavity was filled with connective tissue, foul smelling pus and debris; denuded bone detected by a probe. Patient could not hear whisper, except with the 7-foot hearing-tube. Weber to the opposite side. C^3, C, c^4, all negative. Watch on bone, negative. Neumann's alarm apparatus, positive. Intense vertigo, tinnitus, spontaneous nystagmus to the opposite side. Caloric reaction, positive; the cold water was continued for quite a while before the nystagmus was increased. Fistula symptom, negative. From the findings it must be concluded that the cochlea and canals were intact.

Operative Findings.—Large mass of organized connective tissue filling the greater part of the cavity made by previous mastoid operations. The whole tip of the mastoid was carious, caries of the zygomatic cells, as well as the overhanging walls

of the attic and antrum. My findings offer evidence that the last radical mastoid operation was not sufficiently complete to hope for a cure. Neumann plastic, grafts applied in the usual way. Dressing removed in six days, every graft adherent. Eleven days after operation every graft came away, leaving a very delicate epidermis which became white in a very short time. Between the grafts were small granulating areas that were covered in a few days by epithelium from the graft.

This patient was practically well two weeks after operation; however, there was a serous discharge that continued for a few days longer. I think this discharge was due to the sensitiveness of the new epidermis.

Hearing improved, absolutely dry in three weeks.

CASE 128.—*Patient.*—A man, aged 21, laborer, had had a discharge from ear since childhood, and had three mastoid operations, the ear always having discharged. About one week before I saw him, he began to complain of pain over the whole side of the head, and had such intense vertigo that he had fallen in the street three times during the last week.

Examination.—The whole side of head painful to pressure, extremely painful over tip of mastoid. Temperature 100 F.; surface temperature of the mastoid increased over the other side. Scar of previous operation; foul, offensive discharge, large mass of organized connective tissue, uncovered bone discovered by a probe. Weber to diseased ear. Whisper (paper), 3 feet. Rinné, negative. Schwabach shortened. Negative for low forks, positive for high. Watch on bone, positive. Vertigo. No spontaneous nystagmus. Caloric reaction positive, very much exaggerated with only a small amount of water (hypersensitive). Fistula symptom, negative.

Operative Findings.—Overhanging attic and antrum walls carious. Polypi in antrum, horizontal canal stood out quite prominently; considerable of the bone about it had been destroyed by caries; large amount of connective tissue and additional caries of the tip of mastoid.

Neumann plastic, grafts; cavity dressed in five days, all grafts found adherent. Eight days after operation one graft came away, leaving a delicate pinkish-white epidermis. Case entirely dry fifteen days following operation. Hearing improved—as to how much I cannot say, because the patient left the city during the next few days without my permission.

I attribute the rapid healing in these two cases to the fact that the patients had been operated on before and were not cured; from this fact the bone was oversupplied with blood which in turn nourished the grafts very quickly.

CASE 129.—*Patient.*—A man aged 31, capitalist, whose ears had been discharging since childhood, during the year previous to operation had felt pain back of right ear, with increasing severity. For the last three years he had had headache on diseased side of the head; during the last three months, vertigo following headache had kept him in bed for twelve hours at a stretch. During this time he had been taken home in a conveyance repeatedly, because of intense vertigo. The patient said that the pictures on the wall would jump; when eyes were closed he would feel the eyes jumping.

Examination.—Sensitive over tip of mastoid; entire destruction of drug membrane; hypertrophied tissue covering promontory; no great amount of pus, not much odor. Whisper, 6 inches. Weber to this ear. Rinné, negative. Schwabach, short. C^1, positive. C, negative. c^4, positive. Watch on bone, positive. Vertigo and tinnitus, spontaneous nystagmus, negative. Caloric reaction, positive (hypersensitive). Fistula symptom, negative.

Operative Findings.—Former fracture across mastoid and into attic and antral wall, making same irregular. This does not appear in the history at all (confirmed later by question). Sclerosed mastoid, sinus well forward, dura size of quarter uncovered. Facial uncovered by caries, horizontal canal stood out quite prominently surrounded by spicules of carious bone, caries being very deep posteriorly. Neumann plastic and primary graft.

Following operation the patient had considerable vertigo, nystagmus and headache; in fact he was not quite free from it until the primary dressings were removed which was on the sixth day. All grafts were intact. Fourteen days after operation graft over exposed dura came away leaving the characteristic pinkish-white appearance; no vertigo, nystagmus or headache at this time. About ten days following operation a granulation appeared posteriorly, just under the facial nerve, on more careful investigation a fistula was found that was quite deep, this was repeatedly curetted and touched with silver nitrate in substance until it finally healed in ten weeks.

The ear was entirely epidermized at the end of three weeks with the exception of the fistula; the hearing at that time had been increased from a whisper at 6 inches to a whisper at 25 feet. The hearing at the time he was declared well was 25 feet.

I mention this case more or less in detail to show why it required so long to heal. Had I been sufficiently careful to find this fistula, the patient would have been entirely well in three weeks. It accentuates the very points I wish to emphasize, namely, that complete search must be made, and so long as the Jansen sound is arrested the operation is not complete.

CASE 130.—*Patient.*—A man, aged 38, laborer, had had intermittent discharge from the ear for the last three years; three weeks before operation he began to have pain in the ear and had frequent dizzy spells, though he never fell. A swelling appeared below mastoid about one week before I saw patient.

Examination.—No pain on pressure or percussion. Swelling below tip of mastoid (Bezoldt's mastoiditis), large granulating mass was filling up meatus; offensive discharge. Whisper 6 inches. Weber to both ears. Rinné, negative. No spontaneous nystagmus. Caloric reaction, positive.

Operative Findings.—Sclerosed mastoid; small blackened areas throughout his sclerosed mass of bone; dura uncovered. From the abscess cavity the whole tip could be outlined. Neumann plastic, graft. Hearing before, whisper 6 inches; after, 18 feet.

I cannot say why healing was so slow in this case.

CASE 131.—*Patient.*—A woman, aged 20, stenographer, had had discharge from the ear since childhood, and repeated attacks of facial erysipelas; also repeated attacks of vertigo for several years past.

Examination.—No pain or sensitiveness on pressure or percussion; entire destruction of membranum tympani; small granulation protruding from attic. Whisper, 3 inches. Weber to opposite ear (marked adhesive process in the other ear). Rinné, negative. C^1, positive. C, negative. c^4 positive. Watch on bone, positive. Vertigo, positive. Tinnitus, positive. Spontaneous nystagmus, negative. Caloric reaction, positive. Hearing 7-foot tube, whisper positive.

Operative Findings.—Caries of attic and antrum; dura uncovered, the size of two thumb-nails. Fistula of the oval window with a blackened margin about it, which demonstrates that it has existed for some time; a good-sized probe was introduced into the fistula. Neumann plastic, grafts in usual manner and closed.

First day after operation, everything satisfactory; second day, some vertigo. Third day, vertigo, nystagmus to the opposite side, vomited five times. Fourth day, dressing removed, not so much nystagmus, patient vomited twice. Grafts all adherent.

During the four days, the patient had no fever, the vertigo and nystagmus disappeared gradually. The patient left the hospital in ten days, well in twenty-eight days.

Observations.—My only careful examination of this patient was made nine months prior to operation. From the examination as made at that time, the cochlea and canals were intact, so that a radical ear operation would not have been attended with risk to the patient's life; but when I found a fistula and an old one at that, I felt sure there would be induced an acute exacerbation of the old labyrinth suppuration. However, the patient made an uninterrupted recovery. This patient should have had an operation on the labyrinth at the time of the ear operation, or no operation at all.

I relate this case in detail to accentuate the importance of repeated examinations, should the case not be operated within a few days.

At the time of examination the patient heard a whisper 3 inches; this was much reduced because of the opening of the vestibule. She still hears on this side but it is of no practical use. Had my labyrinth instruments been accessible, I would have destroyed the labyrinth at once; as they were not, I concluded the operation with a skin-graft. The patient made a good recovery which can be attributed to good luck rather than to modern otology.

CASE 132.—*Patient.*—A man, aged 46, a structural iron worker, had had discharge from both ears since childhood, had had pain repeatedly back of the ear, on both sides; attacks of vertigo increasing in frequency.

Examination.—Tenderness over the whole side of the head, especially over the mastoid, exquisitely sensitive over the tip. Temperature 101 F. Increased surface temperature of mastoid when compared with the other side. Pupils widely dilated and sluggish. The ear was filled with a mass of granulation tissue, foul discharge. Whisper, 2 inches. Weber to bad ear. Rinné, negative. Schwabach, normal. C^1, positive. C, negative. c^4, negative. Watch on bone, positive. Vertigo and tinnitus, positive. Spontaneous nystagmus, negative. Caloric reaction, positive. Fistula symptom, negative. Seven-foot hearing-tube whisper, positive.

Operative Findings.—Sclerosed mastoid, caries of attic and antral walls. Neumann plastic, graft and closed.

Remarks.—Skin-graft spatulæ were forgotten and I applied the grafts from surface of round chisels. Patient entirely well twenty-eight days after operation. Whisper before operation 2 inches, after, 15 feet.

CASE 133.—*Patient.*—A woman, aged 34, was hooked by a cow when 3 years of age; the ear and scalp were severely injured. The ear discharged from this time for fourteen years, since this; two or three times a year it discharged for a day or two. Never had pain back of the ear or in the ear. When the ear stopped discharging, seventeen years ago, she began to have vertigo which lasted for some two years. There was no vertigo for a period of four or five years. Since that time there had been more or less at intervals, lasting as long as five days. For the last year she had scarcely been free from vertigo; there had been so much and it had been so severe that it has incapacitated her as a housewife. At times so dizzy she would fall; vertigo and attacks of vomiting which have lasted for several days. Intermittent tinnitus began at 14, for the last year preceding operation it was so severe that it annoyed patient very much, at times explosive in character.

Examination.—Marks of injury about ear and scalp, not sensitive to deep pressure or percussion. Drum membrane intact, hammer very much retracted, membrane shows marks of previous suppuration. Whisper, 3 feet. Weber to diseased ear. Rinné, negative. C^1, positive. C, positive. c^4, positive. Watch on bone, positive. Vertigo and tinnitus as described in history. Spontaneous nystagmus to the opposite side. Caloric reaction, positive. Equilibrium disturbances, positive. Fistula symptom, negative.

Conclusions.—From the fact that the discharge from the ear followed an accident, I was led to believe that there was either a possible fracture with a spicule of bone pressing on one or the other of the canals, or a possible mass (bony) pressing or pinching the membranous labyrinth, or lastly, an erosion induced by the chronic suppuration, such an erosion would be increasing in depth or magnitude. Such a picture could easily be drawn when one remembers that the patient said that she had a discharge from her ear two or three times during the year preceding operation and that it would last but a few days.

From this reasoning I concluded that a radical mastoid operation would relieve her of this distressing vertigo. Cerebellar tumor had been excluded by Drs. Newmark, Lennon and myself, as the only other condition that would be likely to produce such symptoms.

Operative Findings.—No fracture of temporal bone (more detailed history, discharge from ear started before accident). Sclerosed mastoid, otherwise healthy macroscopically, with the single exception that the facial nerve was uncovered by caries anteriorly, and that at this particular place there was an erosion or excavation. This latter condition was found only after very careful search; at the time of operation, I did not think it sufficient to cause so much trouble. However, it proved to be correct and the day after operation the patient said her vertigo was less.

Neumann plastic, grafts. Uninterrupted recovery. Hearing before operation, whisper 3 feet; after operation, whisper 26 feet. Healing, twenty-four days. Vertigo and spontaneous nystagmus entirely gone.

CASE 134.—*Patient.*—A school-boy, aged 17, had had a discharge from the ear for the last eight years. One year ago had pain deep in ear; no headache or vertigo.

Examination.—No pain on deep pressure or percussion. Complete destruction of drum membrane; foul, offensive discharge. Whisper, 6 inches. Weber to good ear. Rinné, negative. Schwabach, normal. C^1, positive. C, negative. c^4, positive. Watch on bone, negative. Tinnitus, positive. Vertigo, negative. Slight spontaneous nystagmus. Caloric reaction, positive (hypersensitive). Fistula symptom, negative. Seven-foot hearing-tube, positive.

Operative Findings.—Caries of the attic and antrum. Neumann plastic, graft, closed.

Hearing before operation, 6 inches. After operation, 6 feet. Duration of after treatment, twenty-four days.

CASE 135.—*Patient.*—A school-boy, aged 9, had had a discharging ear for several years past; never had pain back of ear or deep in ear.

Examination.—Painful over the tip of mastoid, granulation tissue filling meatus, foul, offensive discharge. Whisper, 1 inch. Weber to opposite ear. Rinné, negative. C^1, positive. C, positive. c^4, positive. Watch on bone negative. Vertigo and tinnitus, negative. Spontaneous nystagmus, positive. Caloric reaction, positive (hypersensitive). Fistula symptom, negative. Hearing-tube whisper, positive.

Operative Findings.—Attic and antrum were full of granulation tissue, no mastoid cells. Neumann plastic, graft, closed.

Hearing before operation, whisper 1 inch, after operation, 4 feet. Twenty-eight days, cured.

The reason there is not more improvement in this case is easily understood when one examines the fork findings prior to operation.

CASE 136.—*Patient.*—A girl, aged 7, had had a discharge from her ear "on and off" since 1 year old; six months previous to operation had an acute exacerbation, also considerable pain back of ear at that time.

Examination.—Whisper, 3 feet. Weber to bad ear. Rinné, negative. Schwabach, normal. C^1, positive. C, positive. c^4, positive. Watch on bone, positive. Vertigo and tinnitus, negative. Spontaneous nystagmus, negative. Caloric reaction, positive. Fistula symptom, positive. Hearing-tube, positive for whisper. Not painful on deep or superficial pressure; great amount of offensive discharge from ear; bulging of the posterosuperior wall, mass of granulations coming from above.

Operative Findings.—Pneumatic mastoid entirely destroyed by caries. Pyogenic membrane the size of a half dollar which pulsated when uncovered, looking very much like diseased dura. This cavity was almost as large as half an English walnut. The membrane must have been one-sixteenth or one-eighth of an inch in thickness and was more or less dense. The under part of the cavity was the dura mater which was covered by small granulations. The dura was uncovered until healthy dura made its appearance. Neumann plastic; grafts covering all but the diseased dura, closed.

Hearing before operation, whispering 3 feet, after operation, whisper 25 feet. Duration of after treatment twenty-eight days.

CASE 137.—*Patient.*—A school-boy, aged 17, had had a discharge from ear for three years previously.

Examination.—No tenderness on percussion or pressure over mastoid. Entire destruction of tympanic membrane. Small polypi coming from above; partial destruction of bony attic

wall. Whisper, 6 feet. Weber to diseased ear. Rinné, negative. Schwabach, normal. C^1, C, c^4, positive. Watch on bone, positive. Vertigo and tinnitus, negative. No spontaneous nystagmus. Caloric reaction, positive. Fistula symptom, negative.

Operative Findings.—Caries limited to the walls of the antrum. Dura covered by caries, the size of two thumb-nails, in the region of the attic. Neumann plastic, grafts over all, closed. Hearing before, whisper 6 feet, after, whisper 26 feet. Complete dermatization twenty-one days.

CASE 138.—*Patient.*—A school-boy, aged 9, had had discharge from left ear since infancy.

Examination.—Not painful on deep pressure or percussion over the mastoid. Foul-smelling discharge; entire destruction of drum membrane. Whisper, 3 feet. Weber to non-suppurating ear. Schwabach, normal. C^1, C, c^4, positive. Watch on bone, positive. Vertigo and tinnitus, positive. Spontaneous nystagmus to opposite side and same side, more to opposite side. Caloric reaction, positive. Equilibrium disturbances negative. Fistula symptom, negative.

Operative Findings.—Caries extending to tip of mastoid. Neumann plastic, grafts, closed in usual way. Dressed in four days, every graft adherent.

More nystagmus to either side than he had before operation. Did not speak of vertigo. Left hospital in eight days.

ABSTRACT OF DISCUSSION

DR. HUGO FREY, Vienna, Austria: The after-treatment of surgical operations is very important and any advance along that line must be welcome to us. Many do skin-grafting after the operation; very often, of course, not primarily but later on. In the clinic we have given up skin-grafting in these cases, because the results did not seem to be very satisfactory. Since I have been in this country I have seen a number of cases, especially in the hands of Dr. Welty, and I am induced to try skin-grafting again after the method advocated by him, because his cases have impressed me very much. Many of his patients show good hearing. It seems to me that the problem of the radical operation now is practically solved. But the question of the function after the radical operation has not been so well settled, as it seems to depend largely, not on the scars on the outer wall, but on the growth of the granulation tissue on the inner wall. Often we find considerable production of scar tissue in the inside as the result of operative work. It seems to me better to simplify matters by confining the healing process to the outer labyrinthine wall. The patients operated on in this way look better than when treated with simple plugging. It has been recommended to give up tamponading, but I must say the results then have not been so successful. The method of immediately tamponading the cavity with the patient's own tissue seems to be the method which will give the more favorable result and shorten the time, in comparison with the other methods. I find Dr. Welty did tamponading the first time only. It may be for this reason that the hearing function is so favorable after his operation.

DR. H. B. GRAHAM, San Francisco: My results in skin-grafting are about the same as those of Dr. Welty. The hearing in my patients is about the same as he has recorded. Alexander and Mackenzie, in Vienna, some two or three years ago made an examination of their patients in the polyclinic, as far as hearing was concerned. Whereas it was formerly thought there was a certain percentage of cases in which the hearing was made better by operation, they found that universally a year afterward the hearing was worse than before the operation. Dr. Welty has a good many cases in which he operated over a year ago, so that the lapse of time has evidently had no influence on the hearing in his patients, and he is to be congratulated on that point. Not only has the hearing been made better, but it has remained better. I think the after-treatment with the skin graft is just as long drawn out as the after-treatment in the other procedure. The patient is called healed in two or three weeks, but he has to be followed up for a long time after the operation. The tube is the responsible factor, I think, in a good deal of this delay in healing after a skin graft. Even after the healing of the cavity with epidermis, there is often still a discharge of pus, which comes from the tubal region. If the tube is washed out for two or three months the patient will eventually recover. But we must keep track of these patients for a month or possibly a year or even longer.

DR. HENRY HORN, San Francisco: The results of Dr. Welty are exceedingly interesting and the value of those results are just in proportion as they can be obtained by other men. The more witnesses the more convincing the conclusions appear. Dr. Graham has reported his cases. I have had, since I returned, only twelve cases of radical operation in which I could use skin-grafting and my results were uniformly good. The question arises, why are these results so good when men all over the world have tried skin-grafting only to give it up. Surgeons have already used petrolatum and oil and the application of pieces of cotton and various other methods somewhat similar to this have been applied in skin-grafting, but it seems that in this particular technic there is a fortunate combination and unless the operation is done exactly as described in the paper you will not get the same results. On looking into the wound after operation, it looks like an aseptic operation. The wound is practically healed when we take off the dressing. Of course, I do not agree with Dr. Graham at all when he says that the after-treatment is as difficult with the skin-grafting as it is otherwise. That is perfectly absurd. In fact, that is the most valuable part of this operation. One who has had to treat a nervous patient for a number of weeks by the older method can appreciate what a boon this technic is in the after-treatment.

There is one point yet to be solved, which would make this procedure an ideal one. In a few of my patients the entire cavity was practically healed at the first dressing. The exception is always in the region of the tube. In spite of most careful curettement with the Yankauer instruments, the closure of the tube is not always certain. I doubt very much if the grafts take in this cone-shaped cavity. On the other hand, I doubt very much if a graft could be spread across the cavity, thereby closing it off from the rest of the tympanum. My impression is that healing in this locality takes place by the filling in of granulations and the epidermization from the surrounding grafts. If this were not so and the technic was perfect, we should get a complete healing every time in about two weeks.

DR. J. F. BARNHILL, Indianapolis: I want to congratulate Dr. Welty on his results. They are certainly better than anything I have obtained. In regard to the hearing, granting that the grafts stick, I cannot understand why these patients should have better hearing than after natural epidermization. We know that after natural epidermization the patients do not hear so well as before the operation. Dr. Welty speaks of doing a smooth, clean operation and in that I agree with him, but it is often impossible to remove all of the disease. It is in my opinion unwise to guarantee this in any case. I have a specimen in which the cells go one-half inch deeper than the facial nerve and we know that the diseased cells often extend deep into the petrous portion of the temporal bone.

DR. M. W. FREDRICK, San Francisco: The brilliant results which Dr. Welty achieves have impressed me also, but I fear that, as in many other cases, their brilliancy will exceed their permanence. I object to the use of the word "cured" in this connection. I do not consider a patient cured until he can leave his physician and go wherever he chooses. Recently I have seen two or three patients operated on according to Dr. Welty's method, although they were not operated on by Dr. Welty. In all of these cases the resultant cavity was filled with a mass of débris and cholesteatomatous-like bodies that were removed with some difficulty. When a tissue that is foreign to the locality is used in repair one must expect these masses to form and to require attention several times a year. I prefer the somewhat more tedious process of allowing the cavity to obliterate itself, then the patient may be allowed to go at will.

DR. FRED STAUFFER, Salt Lake City: I would like to ask whether Dr. Welty selects his cases for this operation, and, if so, what kind of cases he selects. In our part of the country we have a great many cases of cholesteatoma, in which the dura and lateral sinus are often exposed, and in removing the diseased bone we often find that the facial nerve is exposed. In such cases the method Dr. Welty uses, of employing hydrogen peroxid and hot solutions, would cause paralysis of the facial nerve. It seems to me it would be difficult in some of these cases to make a skin-graft. I would like to know how he would treat such patients. I do not think his method would be applicable to all cases requiring operation.

DR. E. C. SEWALL, San Francisco: Before I heard Dr. Welty's communication before the San Francisco eye, ear, nose and throat surgeons some months ago, I had been using primary skin-grafts for a considerable length of time. At that meeting Dr. Welty made the statements he has made here, except that at that time he was doing his skin-grafting secondarily, and insisted that it should be done on the fourth day and never on the third or fifth. That evening I criticized his paper, because I felt that the readministration of an anesthetic is not desirable if it can be avoided. Since then Dr. Welty has adopted the primary skin-grafting. I have used the small pledgets which he recommends. He says that they should be counted and that is very necessary, but it is difficult to remove them by count, because they stick together and it is often difficult to know whether you have removed one, two or three of them. I have sometimes left some of those plugs and removed them later, to my chagrin. I found once after the third day a beginning facial paralysis. There was no paralysis immediately following the operation. It developed on the third day and was almost complete. On searching the cavity and removing some hidden pledgets, the paralysis gradually cleared up. There are certain objections to the applications of the grafts. I consider it absolutely unsurgical to do what Dr. Welty says, namely, to cover the exposed dura with skin-grafts. We all know that safety, after exposure of the dura, depends on the completeness of the exposure. If we make a puncture here we make a larger opening for safety. I am quite in sympathy with Dr. Barnhill's entire speech, in regard to facial paralysis, and more in sympathy with the point of view that there is danger in operating on a chronic suppurating middle ear. We will all get deaths if we operate often enough. The use of the cotton pledget is a difficulty. It is the best we have, but it seems to me it would be better if we had something else to use in applying the skin-grafts. I have even thought of something along the line of bismuth paste.

DR. C. F. WELTY, San Francisco: Of course, it is easy to find objections, but I have considered the various points brought up to-day and no doubt shall be able to answer the criticisms, if not in accordance with your notions, at least in accordance with my own. The only thing I have considered is the oiled dressing. In quite an extensive article Alexander and Mackenzie showed that all their patients have diminished hearing after one year. Now, the two series that I have shown here comprise thirty patients operated on in the last year, and in my report next year I expect to analyze the cases. I have patients who hear a whispered word 25 feet after more than a year. When I say that such results are better than anything before presented, you can readily understand my enthusiasm in this improved technic. The hearing is one of the important reasons that I present this particular improved technic. And the reason the hearing is good is that the cochlea is covered with a delicate epidermis. In the other process it is covered with cicatrical tissue from one-sixteenth to one-half inch thick. You can imagine what would result. In a series of thirty cases of this particular procedure the patients are all well. There have been relapses from the accumulation of débris, etc., and in that way pus may form and require care. A patient may require care once in a month, another once in two months and another once in a year. Much depends on the personality of the patient. In passing I will give you something that in my practice has worked very well. After clearing the ear of epidermis and débris, provided there is no pus, mop the cavity out with oil. I have seen patients treated that way, after six or eight months, without the formation of new epidermis. In regard to facial paralysis I have had now eight cases of facial paralysis prior to operation, one in an acute case and seven in chronic cases. Of those patients six recovered and the patient who did not recover was unconscious forty-eight hours before he was operated on and died. I have had no case of facial paralysis following an acute or radical ear operation, except a case of temporary facial paralysis due to pressure, which disappeared in ten days. The after-treatment is concise and precise. You must dry your cavity and you must do it in a delicate way and not put in the gauze in a reckless manner. You will possibly spend more time in the after-treatment than in the after-treatment of the other class of cases. But your time is well spent, for in a few weeks your patient is well. Dr. Sewall said occasionally your patients will die. But remember what I said: If the labyrinth is intact you can do pretty much as you please and the patients will not die.

THE RATIONAL TREATMENT OF FURUNCLES *

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While the treatment of furuncles seemingly may be summed up in two words—incision and drainage—yet I apprehend that a thorough, complete and permanent cure involves a broad survey of many principles, based on a brief consideration of their cause and pathology.

A furuncle, as described by Da Costa, is "an acute and circumscribed inflammation of the deep layer of the true skin and the subcutaneous tissue following bacterial infection of a hair-follicle or a sebaceous gland." The exciting cause is usually *Staphylococcus aureus*. Burrowing down into the hair-follicle and invading the adjacent sebaceous gland, the bacteria excite the surrounding subcutaneous tissue to inflammatory defensive reaction. The blood-vessels dilate and become engorged, resulting in active hyperemia. Leukocytes transmigrate and serum exudes into the zone of defense resulting in a little tumor which is hard, painful and tender. In the center of this little tumor, corresponding to the position of the hair-follicle, is a pinhead-sized vesicle containing clear or slightly turbid serum and projecting hair-shaft. The little tumor grows for three days until it becomes a relatively formidable looking object, harder, more painful and more tender. Regional lymph-nodes become acutely hypertrophied and equally hard, painful and tender. This unwelcome state of affairs causes the patient no little discomfort and a varying degree of septicemia brings on fever and malaise. On the fourth day, strangled by the great pressure of the acute tissue hyperplasia, the hair-follicle and sebaceous gland begin to ulcerate, and liquefaction necrosis sets in. The skin immediately around the hair is slowly dissolved. Liquefaction now proceeds more rapidly and the tumor, from being hard, becomes softened in its center, and fluctuation is palpated. The furuncle, while less hard, is still painful and tender. Left to itself the softened center projects more and more and on about the seventh day bursts, and seropus escapes, affording the patient some relief. Shortly a white slough composed of the destroyed hair-follicle and sebaceous gland and bacteria is loosened and expelled from the central cavity of the furuncle. It

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is followed by the escape of serum which soon becomes tinged with blood. There is now seen a little red pit exuding serum and blood and surrounded by granulations. The lymphadenitis subsides and the patient is comfortable. Granulations soon fill the pit and regeneration of epithelium completes the resolution of the furuncle.

Predisposing causes are diabetes and other constitutional maladies, but more commonly violation of simple rules of hygiene. The established routine of "boils—look for sugar" is rarely fruitful. It will usually be found, however, that the patient is a little underweight, perhaps from overwork and insufficient or excessive or poorly selected food, and that he has become a little careless in the care of the surface of the body. He may be an athlete who thoughtlessly dons a suit soiled and sweaty from previous exercise, or a person who for sake of economy is equally careless about change of underclothing. He may wear frayed linen collars, whose edges grind bacteria-laden dust into the nape of the neck.

Prophylactic treatment, then, requires attention to nutrition and to hygiene of skin. Proper nutrition is maintained by sufficient plain, wholesome food taken at stated intervals and well masticated, and by daily evacuation of bowels to prevent absorption of intestinal toxins. A tonic of iron, quinin and strychnin, and free draughts of water, often from a quassia cup, are desirable. Hygiene of entire skin requires antiseptic baths and fresh undergarments, preferably of linen mesh, daily. Local hygiene of nape of neck is important, and requires cropping of hair every fortnight, daily shampoo, and bathing with witch hazel or cologne water, and the wearing of clean, smooth and preferably soft collars. Scissors should be used on the nape of the neck instead of clippers.

The treatment of furuncles is divided into that of the furuncle itself and that of the low opsonic index of the blood. The immediate treatment of the furuncle itself varies according to whether it is in the stage of formation, the stage of ulceration and liquefaction necrosis, or the stage of resolution. When seen early in the stage of formation, the furuncle, if superficial, may often be decisively aborted in the following manner: Take a wooden applicator or matchstick and whittle to a fine point. Dip in liquefied phenol (carbolic acid). Shake off excess. Bore the point of this phenol-stick firmly and deeply into the vesicle in the center of the furuncle. Withdraw. In the wake of the stick there is seen a pit surrounded by a white eschar, aseptic because the active bacteria have been destroyed. A trace of blood may well up into the pit. The initial pain is quickly relieved by the anesthetic action of the liquefied phenol. If the furuncle is still in the early stage, but rather deep, a method recommended to me in a personal communication from Dr. George H. Simmons—that of injecting by the hypodermic syringe several drops of liquefied phenol right at the base of the furuncle—is effective. There is momentarily a sharp, excruciating pain, but after that, analgesia is established, and the patient freed from his previous tension-pain.

When seen late in the first stage it is common practice to make an incision. I believe this is wrong, for a furuncle, whether incised or not, completes its seven-day course as surely as night follows day. The furuncle still remains painful and hard. The incision in this case is futile because not in accord with the pathology of the lesion. A furuncle is a self-limiting process, always. The serum and leukocytes assemble to wage war against the bacteria. They seek to strangle and cast out the infected hair-follicle and sebaceous gland. This they eventually and invariably accomplish, on the principle of the sacrifice of one for the good of many. The knife, on the other hand, divides the infected hair-follicle and sebaceous gland and invades the demesne of those allies of health and foes of disease—serum and leukocytes. It shortens the process in no way, benefits the patient in no way, and leaves an entirely unnecessary scar. If healing takes place rapidly after incision, it is because the furuncle was well advanced, for in such case the slough will be found to be loose.

Given a furuncle late in the first stage, what is the most rational method of treatment? It would seem to be to establish an outlet, not for the beneficent serum and leukocytes, but for the products of liquefaction necrosis which are formed by Nature according to her best judgment, *secundum artem*. With the scalpel scratch off the little central vesicle. This causes no pain. A drop of discarded seropus follows and the ulcerating hair-follicle and sebaceous gland are exposed. Apply a Bier cup[1] and suck out as much as possible of the exhausted serum and blood. In the wake of the latter from nearby tissues comes fresh blood, with fresh serum and fresh, vigorous leukocytes. It is these that are going to cure the furuncle, and not the surgeon's knife. The knife inflicts unnecessary trauma, and gives the tissues two lesions to deal with instead of one. Often the vesicle does not even have to be scratched, in which case the cuticle is thin enough to be readily ruptured by the cup alone. Apply a dressing of plain sterile gauze wrung short of saturation from a solution of normal saline with sodium citrate. An important consideration in this method of treatment is that of drainage. If a gauze drain is inserted, it plays the rôle of a cork in a bottle. If left alone and allowed to dry, the lymph coagulates, thus plugging the furuncle. In keeping with modern pathologic conceptions what is desired is free bathing of the bacteria with fresh serum from the blood, with its highly antitrophic power. Sodium citrate, 1 per cent. solution, precipitates the calcium salts in the lymph and ensures a comparatively free outlet of the lymph discharge. By osmosis, the sodium chlorid sets up a flow of lymph through the walls of the furuncle, the citrate maintaining the fluidity of the serum. Thus, there is brought about a continuous flow of lymph of high antitrophic power from the congested blood-vessels through the wall of the furuncle and out through the wound. A bit of rubber dam may in addition be inserted if there is much tension on the outlet. The citrate is required for only about three days, and during its use the surrounding skin should be protected from pustulation by an ointment. The patient may make up his own solution for home use by adding a teaspoonful of sodium citrate and two and one-half teaspoonfuls of table salt to a glass of hot boiled water. Over this aseptic drain-poultice apply a piece of waxed paper or oiled silk, then a compress of non-absorbent cotton or wool and a cotton bandage. If the patient is going to lay up, leave the dressing open, instructing him to renew the drain-poultice frequently. The solution prevents the vesicle crusting over and the gauze absorbs the products of disintegration as Nature dispenses them. Sodium citrate should also be administered internally, 15 gr. three times daily after meals, both for its alkaline action on the blood, and for its diuretic action on the kidneys. The cupping and dressing may be repeated and renewed frequently

1. While Sir Almroth Wright objects to the Bier cup on the same grounds that I object to squeezing, yet practically harmful traumatic effects are not apparent, and in any case are far overbalanced by the benefit that ensues.

(every four hours) until the slough is loose, when this may readily be removed by a pair of small dressing forceps. After this, no matter how the resolving furuncle is treated, resolution proceeds rapidly and uninterruptedly, and the resulting scar is always the smallest obtainable in proportion to the size of the furuncle. In most cases it is invisible.

In some cases the granulations, instead of being firm, red and rapidly growing, are flabby, bluish and sluggish. The trouble here I believe is due to relaxation of the tissues and mobility of the part. These conditions may be overcome by strapping the edges of the wound with adhesive strips which compress the granulations and immobilize the skin. Then the granulations are dried, mopped with tincture of iodin, and dusted with Bier's powdered nitrate of silver. Exuberant granulations should be snipped off with scissors; for, as Colles long ago pointed out in his lectures, the silver stick does not "burn down" granulations, as it is commonly supposed, but stimulates them. To promote epithelial regeneration—which, in this method, has a very limited area to cover—8 per cent. scarlet red ointment or amido-azotoluol may be employed.

I object to flaxseed poultices on the ground that, while they may soothe the patient, yet they devitalize the edge of the furuncle, prolong the period of resolution, and leave a legacy of an unsightly depressed scar. I object strongly to the bichlorid of mercury on the ground that it is a corrosive poison, that it devitalizes the vigorous leukocytes and disintegrates the beneficent serum; that it destroys feeble bacteria on the skin but does not reach the more active bacteria in the depths of the wound, and that on tender skin it causes pustules to spring up anew. I am unalterably opposed to incision for the reasons given above. If incise you will, then excise the furuncle entirely; otherwise withhold the knife.

How is auto-inoculation of adjacent hair-follicles to be prevented? By shaving the area of skin wide of the furuncle and disinfecting it with 70 per cent. alcohol, tincture of iodin with benzin, a dilution of liquor formaldehydi or of aluminum acetate. Local disinfection should be repeated at each dressing, benzin being an excellent medium thoroughly to cleanse the skin of wound discharges, effete products, and remnants of adhesive plaster.

Of course, if a patient presents himself for the first time with a furuncle well advanced in the second stage, where there is marked softening and fluctuation, in fact, merely a subcuticular abscess, a small incision through the thinned skin is indicated on the surgical principle of *ubi pus ibi evacuo*. This principle is in no way applicable to a furuncle in the first stage, because there is no pus to be evacuated. I strongly object to squeezing a furuncle in any stage. Squeezing is unsurgical in that it causes acute suffering quite needlessly, traumatizes the furuncle, breaking the barrier of protecting leukocytes, and provokes hemorrhage which interferes with drainage. Make the drain, aided by the Bier cup, remove the pus. It is less painful and at least equally efficient. To hasten the subsidence of the enlarged lymph-nodes and of the acute hyperplasia about the furuncle, thiosinamin may be given by mouth in 1½ gr. doses three times daily after meals.

Immunization against furuncles, when carefully and judiciously supervised, plays an important and efficient rôle. It is either passive or active. Passive immunization is indicated in the active stage of furunculosis, when a furuncle is present on the body, and consists in injecting antistaphylococcic serum, rich in antitoxins, near the infected area, twice a week. Active immunization is indicated in the passive or resting stage of furunculosis, to prevent subsequent appearance of furuncles. It is also efficient in the presence of a furuncle, the course of which is often considerably shortened. In bacteriemia, on the other hand, bacterins are contraindicated, because here they would add to the toxins with which the body is already surcharged. Bacterin therapy consists in injecting subcutaneously killed staphylococci —which act by virtue of their bacterins (bacterial toxins)—in ascending doses, the body cells thus producing more and more antitoxins until the opsonic index is restored to normal. With this accomplished, the patient is not only immune to staphylococcic invasion, but his serum, now rich in antitoxins, could be used passively to immunize another patient with active furunculosis, but the potency of such serum is difficult to determine.

Most efficient are the autogenous bacterins. These are prepared by identifying and isolating the organism from a furuncle, scraping loopfuls from an agar slant, suspending in saline solution and killing by heat. At the University Hospital we suspend approximately 400 million killed bacteria in 1 c.c. of saline. Starting with an initial dose of 0.25 c.c., we increase by weekly injections to 2.5 c.c., the size of the increasing doses depending on the degree of reaction as shown by headache, malaise and possibly fever. While control by clinical symptoms is usually sufficient, yet to perpetuate the cure the patient's opsonic index should be taken at weekly intervals, to anticipate a change from a positive to a negative stage. The waning of the attacks of furunculosis is often indicated by the appearance of abortive furuncles.

The next best treatment of recurrent furunculosis is by yeast (*Saccharomyces albicans*), which stimulates phagocytosis and liberates carbonic acid, thus recalling John Hunter's recommendation of carbonate of sodium for boils. While brewer's yeast (*Oberhefe*) is inelegant pharmaceutically, is a nauseating substance and is hard to keep and to handle, yet it has strong advocates. I have seen furunculosis checked by the use of nuclein in the assimilable form of compressed tablets.

This method of treatment, then, commends itself because it is gentle, simple, painless, rational and effectual. Where, as sometimes happens, the furuncle is exceptionally large and severe—the carbuncular furuncle of some writers—I employ a little operation which seems to meet the indications very well. I fill a hypodermic syringe with a 3 per cent. solution of novocain, enter the needle through the sound tissue at the margin of the furuncle and plunge it under the base of the tumor. After waiting five minutes until the furuncle is completely anesthetized, I take a small curet and remove the core from the center of the tumor. This method is also applicable to furuncles on the face where, because of the wide-spread infiltration from the laxity of the tissues, there is danger of sinus thrombosis by way of the facial and ophthalmic veins. In case the supposed furuncle develops into a full-fledged carbuncle—and it is often impossible to say whether we will have to deal with a furuncle or a carbuncle except with the lapse of time—the safest and surest treatment is excision of the entire carbuncular area, hemorrhage being controlled by the Paquelin cautery and firm compresses, and pure liquefied phenol being applied. Thus will the progress of septicemia and of its effect, cloudy swelling—particularly of the kidneys—be checked, and often the life of the patient saved.

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THE NATURE OF THE VIRUS OF MEASLES *

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AND
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As soon as we had satisfied ourselves of the susceptibility of the monkey to inoculation with measles[1] we turned our attention to the study of the nature of the virus as it exists in the circulating blood. Accordingly we made experiments to determine its filterability, its resistance to drying, heat, freezing and "age," and now desire to present briefly some of our results, reserving greater detail for publication in a bulletin that will cover all of our work.

FILTERABILITY

We have made four separate attempts to determine this point. In each case the blood-serum was obtained by centrifugation of defibrinated blood and was diluted with three volumes of saline solution before filtering through a Berkefeld candle.

Our first two experiments appeared to be negative. In our third experiment we inoculated four monkeys with filtered serum which on account of an accident we had been obliged to pass through two Berkefeld candles. Of these four animals only one, Rhesus 101 b, presented any recognizable evidence of a reaction.

In our fourth experiment, following the inoculation of two Rhesus monkeys (113 a and 113 b) with filtered serum, one, 113 a, developed a well marked reaction with an eruption which began to appear twenty-one days after inoculation. From this animal we obtained some blood with which we inoculated two others, one of which, (a *Macacus sinicus*) No. 125, later developed a fairly well defined febrile reaction.

We conclude from the foregoing that the virus in measles blood is capable of passing through a Berkefeld filter.

DRYING

We have two experiments to record. In each the required amount of defibrinated monkey blood was put into a Petri dish and this with its cover tilted placed over concentrated sulphuric acid in a desiccator. The air was quickly exhausted from this apparatus and it was then placed in our cold room at 15 degrees C. At the end of twenty-four hours under these conditions the blood was found as a dry scale. This was rubbed up and dissolved in saline solution and then used for inoculation.

In our first experiment we inoculated two Rhesus monkeys, Nos. 107 a and 107 b. Of these animals No. 107 b gave no recognizable evidence of a reaction while No. 107 a presented, ten days after inoculation, only a slight rise of temperature that was sustained for two days. Subsequent reinoculation of both animals with virulent blood was followed in neither by any appreciable indication of a reaction.

In our second experiment we used the defibrinated blood of Rhesus No. 110 a, and, as in our first, after drying inoculated two Rhesus monkeys, Nos. 116 a and 116 b. Following this inoculation No. 116 b presented a well marked reaction with an eruption which began to appear fifteen days after the inoculation.

We conclude that the virus in the circulating blood of measles may resist desiccation for twenty-four hours under the conditions of the experiment.

HEAT

We have made three attempts to determine whether the virus in measles blood retains its infectivity after heating, in one experiment at 57 C. and in two at 55 C, for fifteen minutes. None of the monkeys inoculated with blood so heated has given any recognizable evidence of a reaction although the unheated blood used in each case was shown to be infective by control inoculations.

This, we think, strongly indicates that the virus of measles does not retain its infectivity when heated to 55 degrees for fifteen minutes.

FREEZING

We froze some defibrinated blood from Rhesus 110 a shown by controls to be highly infective, by putting a test tube containing it into a freezing mixture, the temperature of which was a little under 13 C. It was kept frozen solid at a temperature between 13 C. and 0.0 C. for twenty-five hours. At the end of this time the blood was quickly thawed out, warmed to 37 degrees and inoculated intravenously in a Rhesus monkey (No. 118 a). Following this inoculation the animal developed a reaction marked by the appearance of an eruption that was first noted twenty-six days after the inoculation.

The virus appears, therefore, to have resisted "freezing" for twenty-five hours although the long incubation period would perhaps indicate some reduction in its virulence.

We think it right to add that some doubt of the validity of this experiment exists because the animal was inadvertently exposed to "contact" during the period of observation. While we are unable to exclude the possibility of contact infection our experience inclines us to believe this possibility rather remote in this instance.

AGE

We made two experiments to test the "keeping" quality of the virus in measles blood. Virulent defibrinated monkey blood was kept in a sterile test-tube plugged with cotton, at 15 C. for twenty-four hours in the first and for twenty-five and one-half hours in the second experiment. At the end of these periods the blood was used for the inoculation of monkeys. Neither of the two inoculated in our first experiment presented any recognizable evidence of a reaction.

Of the two animals inoculated in our second experiment only one (No. 117 b) gave any suggestive indications of a reaction. In studying the temperature curve of this animal one notes a moderate rise on the fifteenth day after inoculation followed by a decline, and this by a second rise of equal degree sustained for about six days.

We are inclined to interpret this as a reaction, and, therefore, think it probable that the virus still retains some of its infectivity after twenty-four hours at 15 C.

SUMMARY

We may summarize our conclusions as follows: The virus in measles blood may (1) pass through a Berkefield filter, (2) resist desiccation for twenty-five and one-half hours, (3) lose its infectivity after fifteen minutes at 55 C, (4) resist "freezing" for twenty-five hours, (5) possibly retain some infectivity after twenty-four hours at 15 C.

* From the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.

1. Anderson and Goldberger: Experimental Measles in the Monkey: A Supplemental Note, Pub. Health Rep., June 16, 1911, p. 887.

It is a pleasure to express our indebtedness to Dr. H. B. Deal, attending physician and Dr. A. C. Smith, resident physician, Garfield Hospital, to Dr. H. A. Fowler and to Dr. J. R. Wilder for access to cases of measles. We are also grateful to the medical profession of the District, particularly to Drs. Percy Hickling, R. T. Holden, E. E. Richardson and M. O. Dumas for their courteous cooperation in offering us access to some of their measles patients.

PREVENTIVE MEDICINE SECTION COMMITTEE REPORTS *

REPORT OF COMMITTEE ON STATE METHODS OF PUBLIC EDUCATION IN HYGIENE †

I. SHOULD STATE BOARDS OF HEALTH UNDERTAKE AN EDUCATIONAL CAMPAIGN IN HYGIENE?

There seems to be not a shred of an argument against the opening and the continuing of a strong campaign of education of the public in hygiene by state, city and town boards of health. The advantages would be many and the disadvantages none. That the public sadly needs the education, appears in the fact that not 2 per cent. of all people born escape being stricken with preventable ailments. The masses of people do not know how to breathe, do not know why they breathe and do not know what they breathe. Dust, smoke, the products of combustion and vile odors, so far as their hygienic bearing is concerned, are simply words to them. The masses are beginning to have permanent glimmerings of the importance to health of drinking pure water and pure milk, but are not yet quite ready to stand the expense by which these blessings are to be obtained.

The necessity of hygienic housing for the benefit of society and the nation by raising the general health is yet little appreciated by those who are directly affected, is not at all appreciated by those who own living blocks, and business men generally are all too indifferent. Well-to-do farmers and well-to-do merchants, in not small numbers, still strongly oppose the erection of sanitary school houses on account of the initial expense; they oppose necessary sewers, they oppose building good roads and streets, they oppose drainage for the purpose of conquering malaria, and they settle any proposition to conform to the laws of health, by hurling the epithet "crank" at any one having the temerity to propose such a thing. Yes, public education in hygiene is badly needed, and the labor properly falls on health authorities.

II. WHAT SHOULD BE THE FINANCIAL PROVISION FOR SUCH A CAMPAIGN?

The answer to this depends on many conditions. If hygiene be effectually taught in the public schools and if medical inspection of school children is in force, then, within a decade, public health exhibits and pamphlet distribution may largely be done away with. Until then, however, public exhibits, pamphlets, bulletins and lectures are decidedly in order. The expense must, with rare exceptions, be borne from public treasuries, and a vital question is, how may the said treasuries be opened for this good purpose? In instances, funds may be secured from persons who are the holders of accumulated wealth; and such source might appropriately be termed accidental. Wherever it can be laid hold on, there most probably will be found a practical philanthropist who will be keen enough to do it.

In order to secure funds for such work from public treasuries, certain influential members of the laity must be converted to the cause, and they must publicly express themselves. In the state of Indiana, Governor Thomas R. Marshall was convinced by his own family physician and other members of the profession of medicine that in preventive medicine the state would find a source of revenue, a source of strength, and a source of happiness. He spoke forth his convictions from the platform and in message and the holders of the keys to the money-boxes listened and heeded. In consequence, eight out of nine bills bearing on different phases of preventive medicine were enacted into law and the appropriation of the state board of health was doubled. The lesson is, those interested must make politics out of humanitarian and philanthropic causes, showing their economies, in order to secure the wealth and happiness to society which lie in such forces.

As to the amount of money necessary to carry on campaigns of education in public health work, this will depend on many conditions, but it may be safely predicted that the practical politicians, holding the strings to the public money bags, will not loosen said strings sufficiently to swamp the cause.

III. SCHEMES OF ORGANIZATION

1. Each state board of health and each board of health of large cities should have a bureau of education, or a publicity bureau with a superintendent whose whole time should be given to this phase of public hygiene. Said superintendent should, of course, be capable; but more, his heart should be in his work and he should stand ready at any time to make large sacrifices for the cause.

2. Proper help, in numbers and character, in the line of intelligent clerks should be provided, and every effort put forth to secure the moral support of the people.

3. Proper pecuniary support must be secured. Obviously the amount must be commensurate with the work that is projected and if not, the process must be reversed, and the work projected must be commensurate with the appropriation.

4. A scheme of organization for a department of publicity must be according to the size of the state or city and the moneys available, and no syllabus for said organization will be offered herewith.

IV. METHODS OF MAKING USE OF EXHIBITS AND LECTURES

Of course a Cæsar or a Napoleon would make use of and find advantages in general methods of any kind and for any purpose which would be unthought of by the ordinary person, and so, whatever force or advantage any one method of addressing the public might have will depend on the man in command.

Car Exhibits.—The excellent examples set by Louisiana and California in the matter of traveling exhibits could well be followed by other states. The financing and the securing of the aid and cooperation of the railroads are the first two steps in the enterprise. These being secured, the character and arrangement of the exhibit follows. The aid of the press, on account of its unusual comprehension of public needs, is always easily secured, and said aid may always be assured to be at hand.

The coming of an exhibition car to a community should be fully heralded in the local press; posters, descriptive and explanatory of the exhibit, should invariably precede the car, and it would be well to have a box for contributions in a conspicuous place and to supply tags for all visitors. These would lend a personal interest to visitors and especially to contributors.

Hall Exhibits.—While car exhibits have the advantages of novelty, rapid transportation and always being in order, still, they must be expensive and the space is not large. Halls for hall exhibits may quite always be secured without rent, even an empty store room answering the purpose very well. Indeed, such rooms are to be frequently preferred because they are usually in the business district of a town and very accessible. It is certainly true of the car and the hall exhibit; both have their advantages and both should be used.

Lectures and Sermons.—Illustrated and not illustrated, lectures and sermons are usual and excellent methods of educating the public. The effectiveness of speakers will differ greatly, but sincere, earnest and plain presentation of the facts will always be potent in arousing action. Unless action is aroused, the lesson is of little worth. The presentation of moving pictures will not be forgotten, although the very refined police of Indianapolis did forbid the showing of the now famous fly film, which has done such excellent service in cities and towns everywhere in the land. In Indianapolis, a woman complained to the police that the maggots hatching

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

† Other reports will appear in succeeding issues

into flies shown by the fly film made her sick, and the horrid thing should not be exhibited. The police responded and suppressed the show and it was afterward found that the maggot-passing-into-fly process was actually and really happening in the complaining woman's backyard and also in many places near the police headquarters. The incident is related simply to show that certain kinds of women and certain kinds of police must be considered in getting up exhibits for the instruction of the people in any of God's truths.

V. HEALTH OFFICERS' SCHOOLS

Schools for health officers are a real necessity in these days. Health officers should be called together at least annually by state boards of health or health commissioners, that matters pertaining to public hygiene may be discussed and acted on, that instruction might be given by persons who have become prominent in the work, and also that all may profit by criticisms and through questions and answers. The enthusiasm and interest which health officers' schools arouse in an invaluable help in the cause.

Public Schools.—The most promising soil in which to plant the seeds of hygiene is the public schools. The minds of children, being plastic and receptive, will readily accept and assimilate new truths, and these becoming a part of the composition of the child will find practical expression when adult age is reached. It sometimes seems to be a waste of time to try to secure the action of adults in the matter of the practical application of well-known hygienic truths. They, in considering the matter, remember they have survived, and then draw wholesale conclusions to the effect that the truths and arguments presented in regard to disease prevention are all bosh.

The advice given by President David Starr Jordan is certainly sound: "If ever you wish to go in for philanthropy, if ever you wish to be of any use in the world, do something for little children." And further, "If the great army of philanthropists ever exterminate sin and pestilence, ever work out our race's salvation, it will be because a little child has led them."

Posters, Wall Cards, Etc.—The usefulness of posters, wall cards, charts, cartoons, pictures, etc., in education is very great. Directions for preparing them cannot be given, as they must be devised by the intelligence, tact and ingenuity of the individual. The posters and charts presented by the New York Health Commissioner and other health authorities are most ingenuous and excellent. They all forcibly illustrate various phases of disease prevention, and health authorities who find themselves unable to excel such charts and posters will undoubtedly be given permission to use those from other states on request.

Bulletins.—All kinds of bulletins in all kinds of causes have always been effective. A fully successful bulletin treating any phase of the public health cause will depend for its success on lucid and striking expression. The prosy, dull bulletin, telling its story in humdrum style, will never make a hit. It will not interest and will not cause its readers to act. The healthgrams of the Chicago Health Department Bulletin, and like grams of other bulletins, have made good and lasting impressions. The lesson is that bulletins on health subjects must be bright and original, presenting their matter briefly and strikingly.

The Press.—Most potent of all educational forces, except the schools, is the press. We are a nation of newspaper readers and through the papers is found the best method for immediately reaching the public. Everywhere newspapers most gladly publish live readable matter on public hygiene. Without the aid of the press public health work would move slowly indeed. In using the press, as in other methods of reaching the public, success depends very largely, perhaps altogether, on the tact and talent of those who prepare the matter.

J. N. HURTY, Chairman, Indianapolis.
WILLIAM F. SNOW, Sacramento, Cal.
OSCAR DOWLING, Shreveport, La.

ABSTRACT OF DISCUSSION

DR. W. F. SNOW, Sacramento, Cal.: The subject of educating the public should be divided into at least two divisions: the children and the "grown-ups." At the age of 14, 85 per cent. of children leave our schools never to return. The problem, therefore, is very different with our children up to the age of 14, and from that age on.

In the teaching of children I believe the most important new factor for us to emphasize is the use of the moving pictures. Somehow or other, teachers are very slow to utilize this wonderful mechanical invention. Our high schools are nearly all equipped with stereopticons, and many of our grammar schools are similarly equipped and have weekly lantern-slide shows; but the moving picture itself, which is the same kind of a mechanical device, is not used, and many teachers think that moving pictures are to be frowned down. In California we are trying to have arrangements made for a weekly educational day in every town which has a moving picture show.

We have had some experience in California with a traveling sanitation car, which I think was the first one sent out in this country. We had to operate some such plan to cover the great distances in California. This car has had a great influence with the schools, but as Dr. Hurty has emphasized, these methods are somewhat transitory. They create a great deal of interest at the time and do excellent work in getting newspaper publicity, in distributing literature and in reaching all the children of the schools with preliminary impressions of public health and hygiene. But permanent results do not follow unless such general methods are supplemented with something else that is more durable.

Just now in California we are trying a supplementary experiment with what we call small serial demonstrations. We have small relief maps, so provided with models of houses, dairies, vegetable gardens, etc., that the children may lay out the sanitary situation in their own districts and then move these houses around to correct the bad features. In other words, the outfit is designed to teach the children at the round-table to play sanitary games. These outfits are boxed up, sent out to the different schools for a period of a week or two and then sent on to other teachers. In a similar way we are sending out small bacteriologic exhibits. We have a pure food exhibit along the same lines. The State Board of Health is sending these out in an effort to stimulate communities to establish permanent work along these lines in their schools.

So far as general results are concerned, Dr. Hurty has undoubtedly wisely emphasized the newspapers. If we stop to think of it, when we lose 85 per cent. of our children at the age of 14 or 15 from our schools and they go into our industrial occupations, from that time on they never get any organized instruction except through the daily and weekly papers of their community. I believe that the newspaper is truly the great educational system for adults at the present time. We have only just begun to realize this, and to cooperate tactfully and efficiently with the newspaper editor in utilizing his opportunity in the field of education.

In regard to exhibits, up to the present we have largely gone before the public without any attempt at correlating the ideas put forward. The result is that the public believes all these things to be a matter of hobbies. We must work out some scheme for presenting to the public all the time a connected, comprehensive idea of health conservation in all its phases, no matter what particular phase is being agitated in the community at any given time.

DR. FRANCES M. GREENE, Cambridge, Mass.: Until now sex-education has always been relegated to the mother; seldom to the father or the physician; and the physician has always lent himself to the little fairy tale which forms the first lie that a child is obliged to hear. But when the great congresses met in order to face the question and to solve the problem of venereal disease, they all turned to the mother and said, If we want to do anything to help these conditions, we must begin by teaching the infant, by being serious with the child. This was very easy to say, but exceedingly difficult to do;

and I find, after several years of work in trying to teach mothers how to be sincere, that we need help in all directions; and in this the doctor can serve us greatly. The family physician should do his best to make the mother realize, not only what she is going through at childbirth, but the responsibilities she is going to take on herself; and that what is about to happen to her is one of Nature's mightiest phenomena, whose significance should be reverently understood by the children in the household. She should not try to conceal her position, and nothing can help so much as having the family physician talk to the father and make him realize his responsibility in the matter.

In the first place, the first question that the child asks should be answered with sincerity instead of falsehood, coldness and very often a distinct rebuff. Then the confidence between the parent and the child will be made fast; the child will not turn elsewhere for information which the parent can give best of any one; and as he grows to puberty, instead of getting information about the most necessary and natural things from strangers, the mother and father will be his natural teachers. Then by a very easy and natural process, when the boys and the girls go out into the world, they will be told about the dangers which they are there to meet, and be prepared to meet them. In this matter the physician can greatly help or greatly harm. I have had women say to me: "What can I do when I go to my physician and tell him that my boy has had night emissions, and he answers that the only cure is to send him to a prostitute?" or when the boy is given a latch-key and sent by his own father as soon as he is 14 or 15?

DR. WILLIAM C. WOODWARD, Washington, D. C.: A method of educating the people that has not been referred to at this meeting was forcibly pointed out at the general meeting this morning, in a letter that was sent to the Association by Senator Robert L. Owen. In substance, he pointed out that if we would have the people believe our teachings and live up to the principles that we enunciate, we ourselves must follow such teachings and live up to such principles. And what is true of individuals is true also of communities. No city or state, nor the federal government itself, should impose on the individual sanitary requirements which the city, or the state, or the federal government does not live up to.

DR. OSCAR DOWLING, Shreveport, La.: In Louisiana, since Nov. 5, 1910, we have made a state-wide health-educational campaign. The majority of the people, not only in Louisiana, but in many other states, do not know how to practice the simplest health rules, or know why they are necessary. They think of disease as inevitable. This is no reflection on them. It means simply that we, as a nation, have not emphasized principles of hygiene and sanitation either in legislation or administration. I believe Louisiana has the distinction of being the only state in the Union to own a health train. In our campaign these cars—two containing exhibits, one used as living quarters—were transported over 7,000 miles in the state. Two hundred and fifty-six towns were visited. Nearly three thousand inspections were made. In order to have accurate personal knowledge of conditions and a correct judgment of the attitude of the public mind toward health reform, I myself made these inspections, with very few exceptions.

It has been estimated that eight years could be added to the normal period of human life by merely securing reasonably pure air, water and milk. Having this in mind and the tremendous importance of food in physical welfare, the effort was to make plain to all those engaged in manufacture, production, or sale of foodstuffs, that surroundings, including the method of handling, must come up to a certain standard of cleanliness. Dairies especially were selected as an object lesson. Five hundred and eighty-one were inspected. I am sorry to say conditions in some were rather bad. In one town our officers picked up one morning six samples of milk. Five of the six had been watered. One dealer on being asked to show cause why he should not be prosecuted replied that he had brought it 3½ miles. If he didn't add water, the milk was so rich it would turn to butter before he could get to town. The score card of the American Dairymen's Association was adopted and we require that every dairy to receive a permit to sell, shall score 50 points. We taught the people how the actual cleaning should be done. We require a tuberculin test and when the cows react, they must be slaughtered. We find that in the country where the herds are kept in the open, fewer react. In one herd of 180 in the city, 37 reacted; in the country in four herds numbering 300 there was only 1. Since the inspection tour many dairies have been remodeled, and we believe the time is near when Louisiana will have as pure a milk-supply as any other state in the Union. Nearly every slaughter-house inspected was condemned. These are being replaced by sanitary and modern structures. In this campaign instruction in prevention of disease was given in every talk, demonstration and lecture. Louisiana, as all members of the medical profession know, is free from yellow fever. Now we want to get rid of the mosquito. Cleanliness and drainage will do this and as a result we shall be practically free from malaria.

It was predicted that the abolition of the public drinking cup would meet with much opposition, but we had four months in which to carry on this educational campaign before the regulation went into effect and we are glad to say that the people are loud in their praise of its abolition. The enforcement of this law has had a widespread educational influence. In effect it enters into the lives of many classes of people.

We have secured beyond our hopes the cooperation of the citizens in the reporting of births and deaths. A little story of Dr. Hurty's relative to a lost inheritance seemed to appeal to the people and arouse their interest. A regulation which will go into effect July 1 will further protect the people from infectious disease, namely, the abolition of the common towel. Foodstuffs also, after July 1, will be further protected by the regulation which requires wrapping of bread and protection of other products from dust and flies. We have the cooperation of the people throughout the state and believe that Louisiana, in response to an earnest effort for ideal conditions, will be in a short time as clean—we won't say cleaner—but we hope will be just as clean as any other state in the Union.

REPORT OF COMMITTEE ON STANDARD METHODS OF PROCEDURE FOR THE CONTROL OF BOVINE TUBERCULOSIS IN RELATION TO MILK-SUPPLIES *

We, the committee to whom was referred the question concerning standard methods of procedure for the control of bovine tuberculosis in relation to the milk-supply, beg leave to suggest the following recommendations as a basis for laws, regulations and ordinances by municipal health officers:

1. That all cows on dairy farms producing milk for market purposes be tagged, tattooed or otherwise marked for identification.

2. That (a) all milk produced on such dairy farms shall either come from tuberculin-tested cattle, which shall be retested at least once a year; or
(b) if sold from untested cows the latter must be given a careful physical examination every three months by competent veterinarians accepted by the board of health, all suspicious animals being eliminated, and the physical score-card of each animal in the herd filed with the proper health authorities (commissioner, board, veterinarian); or
(c) the milk must be subjected to pasteurization under the supervision of the health authorities in case the herd is not handled in accordance with the above requirements.

3. That no additions to any herd, whether the herd has been tested or not, shall be made in the future without subjecting the additional cattle to the tuberculin test.

4. That no license for the sale of milk shall in future be granted except to applicants having herds known to be free from tuberculosis, as indicated by the tuberculin test.

5. That the milk of cattle showing any udder affection, or anthrax, rabies, gastro enteritis, septic conditions, or clinical symptoms of tuberculosis, shall not be utilized as human food,

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

even though the milk be pasteurized. Milk from cows fifteen days before and five days after parturition, and that from animals receiving any deleterious medicaments or foodstuffs shall likewise be excluded.

6. That veterinary inspectors of health departments make frequent visits to dairies having untested herds, in order that they may discover all advanced cases of tuberculosis, or udder tuberculosis, as early as possible.

We favor the amendment of all state laws in order to make them include the following features:

1. The compulsory testing of all dairy cattle and the requirement of certification of the tuberculin test for all dairy cattle sold, except for purposes of immediate slaughter.

2. The adoption of an official system of marking reacting animals in such a way that they can be definitely identified.

3. The payment of appropriately-guarded indemnity to all owners of tuberculous cattle which come under the respective jurisdictions of the various states, the said animals to be slaughtered in abattoirs having federal, state or other efficient inspection. Exceptions should be made in case of cattle valuable for breeding purposes, but such animals must be kept in quarantine under strict supervision.

4. The prohibition of the sale or feeding of unpasteurized milk from reacting cattle.

THE TUBERCULIN TEST

1. "That tuberculin, properly used, is an accurate and reliable diagnostic agent for the detection of active tuberculosis.

2. "That tuberculin may not produce a reaction under the following conditions:

"(a) When the disease is in a period of incubation.

"(b) When the progress of the disease is arrested.

"(c) When the disease is extensively generalized."

"The last condition is relatively rare and may usually be detected by physical examination.

3. "On account of the period of incubation and the fact that arrested cases may sooner or later become active, all exposed animals should be retested at intervals of six months to one year.

4. "That the tuberculin test should not be applied to any animal having a temperature higher than normal.

5. "That any animal having given one distinct reaction to tuberculin should thereafter be regarded as tuberculous.

6. "That the subcutaneous injection of tuberculin is the only method of using tuberculin for the detection of tuberculosis in cattle which can be recommended at the present time.

7. "That tuberculin has no injurious effect on healthy cattle.

"That a positive reaction to tuberculin in any properly conducted test, official or otherwise, in any animal in any herd, shall be considered evidence sufficient on which to declare the herd to be infected." (From report of International Commission on the Control of Bovine Tuberculosis.)

In the application of the tuberculin test as well as in the interpretation of the results obtained, the following conditions are recommended in order to secure uniformity of procedure:

1. Keep stable cattle under usual conditions and among usual surroundings, feeding and watering in the customary manner.

2. Make a physical examination of each animal, and give to each one some designation by which the animal will be known throughout the test.

3. Take each animal's temperature at least three times at two- or three-hour intervals on the day of injection; for instance, at 2, 5 and 8 p. m. When the last preliminary temperature (which would immediately precede the injection) registers above 103 F., the injection of the tuberculin should not be made; the test of such animal should be postponed.

4. At 10 p. m., inject a dose of tuberculin under the skin in the region of the shoulder, using a sterile hypodermic syringe, after disinfecting the skin at the seat of injection with a 5 per cent. solution of carbolic acid or a similar antiseptic solution.

5. The dose of tuberculin (Koch's original concentrated) is from 0.25 to 0.33 c.c. for adult animals, weighing about 750 pounds. It is convenient to dilute this with a 0.5 per cent. solution of phenol (carbolic acid) until the size of the dose to be given is 2 c.c. Yearlings and 2-year-olds, according to size, should receive from 1 to 1.5 c.c. of such solution, while bulls and very large animals may receive 3 c.c. Double, or even triple, doses should be given to cattle recently injected with tuberculin; also in the case of animals which, on physical examination, are supected of being tuberculous.

6. At 6 a. m., on the day following the injection of tuberculin commence taking temperatures, and continue every two hours until the twentieth hour after injection, at which time if there is no tendency for the temperature to rise the test may cease.

7. A rise of 2 F. or more above the maximum temperature observed on the previous day, or one which goes above 103.8 F. should be regarded as an indication of tuberculosis, provided the temperature reaction shows the characteristic rainbow curve.

8. Animals which, after injection, show a rise in temperature of 2 F., with a maximum between 103 and 103.8 F., as well as those which show a rise less than 2 F., with a maximum temperature of 103.8 F. or more, are to be regarded as suspicious. These suspicious cases should be held for a retest six weeks later, giving double the original dose.

9. The ophthalmic, cutaneous or intradermal applications of tuberculin are still in the experimental stage, and cannot be recommended for a routine practice at the present time.

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REPORT OF COMMITTEE ON REGULATIONS FOR THE PASTEURIZATION OF MILK *

1. No milk shall be used for pasteurization which comes from a dairy scoring less than 55 on the Department of Agriculture score-card, which has been scored by an official inspector.

2. The milk must have been kept cool (below 50 F.) from the time it leaves the dairy to the time it reaches the pasteurization plant and shall be kept below 50 F. at the plant up to the actual time of pasteurization.

3. The "flash process" for pasteurization is to be condemned.

4. The "holding process" shall be the only process recognized as efficient. The milk must be held for twenty minutes at 145 F., or for five minutes at 160 F.

5. The heated milk must be cooled immediately after the period of holding has elapsed to 50 F. or below.

6. Automatic temperature devices recording the exact temperature in the pasteurizing machine during the process are to be attached, and keys for these devices are to be kept by the health department.

7. Bacterial counts and acid determinations to control efficient cooling during transportation shall be made at regular intervals. These coupts should be made before and after pasteurization to control the efficiency of the pasteurizing process.

8. Pasteurized milk, on leaving the pasteurizing machine, should not contain more than 50,000 bacteria per cubic centimeter, no matter what the initial bacterial content of the raw product was.

9. The pasteurized milk must be kept below 50 F. up to the time of delivery to the consumer.

10. Pasteurized milk should be designated as such on the bottle cap or in any other suitable manner.

11. Employees in the pasteurization plant should be subject to medical examination at regular intervals. If any employee contracts a contagious disease, this fact should be reported to the health department without delay.

12. Pasteurized milk should receive the same care as raw milk under all conditions.

E. O. JORDAN, PH.D.,
Professor of Bacteriology, University of Chicago.
P. G. HEINEMANN, PH.D.,
Associate in Bacteriology, University of Chicago.
Committee.

ABSTRACT OF DISCUSSION

DR. L. M. POWERS, Los Angeles: The proposal is a very good one. I would like to make one amendment. Milk should not be allowed to be pasteurized more than one time. It is not a provision of our ordinance at the present time; but I see that we will have to enact it. Milk that is shipped from a long distance into the city is pasteurized more than once: pasteurized up north, a couple of hundred miles from here;

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

shipped in here and then, to prevent it from spoiling, is repasteurized; if the delivery wagon goes out and any milk has been returned undelivered, again it is repasteurized. If it is not spoiled the customer gets it after three pasteurizations, or three cookings. Otherwise, I think the provisions are excellent.

DR. WILLIAM C. WOODWARD, Washington, D. C.: In determining whether milk is or is not fit for pasteurization, it is not, I believe, possible to rely absolutely on the mere rating of the dairy farm in terms of the total score attained as shown by the score card of the Department of Agriculture or by any other score card. The Department of Agriculture allows on its latest score card for conditions pertaining directly to the cattle themselves fourteen points out of a possible 100. It would be quite possible, therefore, to have every cow in the herd tuberculous and dirty, and yet to have the total score for the dairy farm above that fixed by the committee as entitling the milk to use for pasteurization. In order to determine the meaning of a score card, it must be interpreted by some one trained for that very work. The total score considered alone means very little, and no rule of thumb can be adopted for determining the significance even of the detailed score.

REPORT OF COMMITTEE ON THROAT CULTURES *

Your committee, after having conducted an investigation of the present status of methods of throat culturing for the diagnosis of diphtheria, has elected to submit the accompanying report of progress with the recommendation that the committee be continued, with authority to investigate the subject further during the ensuing year.

The work of the committee has been thus far confined to the collection and study of data furnished by public health laboratories in which routine bacteriologic diagnosis of diphtheria is regularly performed. With this object in view, a large number of inquiries and requests for sample outfits were sent out. The information thus collected has been studied with the view of the ultimate recommendation of standard procedures in so far as this is possible. It does not seem desirable, at this time, that a complete culture outfit be recommended for adoption by the Section, or that a standard laboratory technic be outlined. It is deemed advisable, however, to submit a brief summary of the information thus far collected, together with such recommendations as have been agreed on by the committee, and to invite free discussion by members of the Section of the subject-matter presented.

CULTURE OUTFIT

Your committee recommends that the outfit used by state laboratories be so constructed as to be mailable. The present postal regulations require that such an outfit shall consist of two screw-topped metal cases, one fitting inverted within the other, in the inner of which are contained the tubes of infectious matter, protected from breakage by cotton wrappings.

It is further recommended that the culture outfit used in state laboratories shall not contain culture medium, but shall contain swabs only,[1] preferably two in number, enclosed in separate test-tubes for nose and throat cultures. This method eliminates the difficulties and delay arising from the use of old, dried or contaminated culture media, and insures the proper inoculation of the medium by expert hands in the laboratory.

The swabs on arrival in the laboratory should first be used for inoculation of cultures, after which direct smear preparations should be made. All frank positives obtained by the direct smear method (which in expert hands amount to from 60 to 80 per cent. of the total final positives) should be reported at once, and the others should be held for the result of the culture.

Outfits supplied by municipal laboratories may be mailable or non-mailable, as circumstances may dictate, but as mailable outfits are, as a rule, much more expensive, non-mailable outfits are usually to be preferred.

The omission of the culture medium in the outfit designed for municipal use is left optional. It is to be noted, however, that a number of municipalities are now sending out swabs only.

Your committee recommends that all swabs be returned to the laboratory irrespective of the presence or absence of culture medium in the outfit. For this reason, swabs should be sent out in sterile glass tubes plugged with cotton. The swabs so returned are more certain of proper sterilization and are available for direct smear examination and for reinoculation of the culture medium in case of doubtful diagnosis.

Of the materials used for swab sticks, wood, aluminum wire or iron wire seem preferable. Copper or brass wire is not recommended, as there is a possibility that copper salts derived from the oxidation of the wire may, at times, exert an antiseptic influence on the organisms with which the swab is impregnated.

Tongue-depressors are omitted from the outfit by the majority of laboratories.

Drying of the culture medium is prevented in various laboratories by the use of rubber caps, paraffin, sealing wax, aluminum foil and paraffin, and corks enclosed in cotton and dipped in paraffin. In case the aluminum salve box is used a rubber band or strip of physicians' adhesive tape will serve the purpose.

INSTRUCTIONS AND PRINTED MATTER

It is recommended that information as to the interpretation of findings be enclosed in the outfit. This is intended to save the laboratory unnecessary, irrational complaints and to guard against misinterpretation of results on the part of those unfamiliar with laboratory diagnosis. A sample statement of such information is herewith submitted:

A positive report cancels all previous negatives on the same case.
A negative report may mean any one of the following:
1. Absence of *B. diphtheriæ* in the throat.
2. Failure to reach the bacilli with the swab. This occurs frequently in laryngeal cases and may occur in pharyngeal cases through imperfect technic. (See instructions.)
3. Failure to inoculate the medium properly.
4. A very few diphtheria bacilli in the presence of many other varieties may be overlooked by the bacteriologist. Statistical study shows this to be infrequent.

"Suspicious organism" calls for a second culture. Antitoxin should be given at once and temporary isolation instituted. All suspicious cultures will be reincubated and will be reported a second time if more definite findings are obtained.

"No growth" means nothing. Diagnosis is withheld and a second culture is required. It may be due to—
1. Use of an antiseptic in the throat previous to taking the culture.
2. Failure to inoculate the medium properly.

"Contamination" means nothing. Diagnosis is withheld and a second culture is required.

It is further recommended that the report of the laboratory cover the following findings only:

B. diphtheriæ present.
No *B. diphtheriæ* found.
Suspicious organism.
Streptococcus (when the predominating organism).
B. influenzæ (when the predominating organism).
Spirillum of Vincent.
No growth.
Contamination (when sufficient to invalidate the diagnosis).
Sample instructions for making throat cultures are also included herewith. (See accompanying sheets.)

RECOMMENDATIONS AS TO POLICY

It is recommended that two successive negative cultures, taken at intervals of not less than twenty-four hours be required for release from quarantine.

It is further recommended that all terminal cultures be taken from both the nose and the throat.[2] The taking of nasal cultures for initial diagnosis is left optional with the physician.

In case of doubtful laboratory findings, temporary isolation of the patient should in all cases be ordered and maintained until a subsequent culture proves negative.

LABORATORY PROCEDURE

Under this heading the committee makes no definite recommendations, but merely submits information as to the customary procedure in public health laboratories. The culture medium in common use for diagnosis of diphtheria is Loeffler's blood-serum. For its preparation horse-serum, pig-serum and ox-serum are used according to the following formula:

Serum ..... 3 parts
Broth, containing 1 per cent. dextrose and 1 per cent. peptone. 1 part
Glycerin ..... 4 to 5 per cent.

Some laboratories are still using fractional sterilization on three to four successive days, but the majority are now using the autoclave, either with or without previous inspissation. One correspondent recommends egg-medium for emergency use (25 c.c. of physiologic salt solution to four eggs sterilized in the autoclave or fractionally in an Arnold sterilizer).

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* Read in the Section on Preventive Medicine of the American Medical Association, at its Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Slack, Arms and Wade: Longevity of *B. Diphtheriæ* on Swabs, Jour. Am. Pub. Health Assn., 1910, xx, 639.

2. Nose and throat cultures should be taken with separate swabs to avoid transferring the infection from one cavity to the other. In release cases, if desired, both swabs may be rubbed on one and the same culture-tube or box. In diagnosis cases separate culture-tubes should be inoculated from each swab.

The temperature commonly recommended is 37 C. The time of incubation varies from six to twenty-four hours, and in most instances falls between twelve and eighteen hours.

Loeffler's methylene-blue is the sole staining agent recommended by the majority of correspondents and Grübler's preparation is universally recommended as a satisfactory brand.

A few special stains are mentioned, e. g., those of Gram, Neisser, Grouch, Rush and Epstein, as aids in the case of doubtful diagnosis. Of these the one last mentioned appeals to the committee because of its simplicity. The directions are as follows: Stain the slide in the ordinary way with Loeffler's methylene-blue; flood half the slide with Gram's iodin solution. Wash in water and examine. The stain brings out the granules, which are colored blue. The body of the bacillus stains brown.

As to the Wesbrook types, the majority of correspondents report that they are a satisfactory basis for diagnosis for twenty- and twenty-four-hour incubation periods. Two observers report them unsatisfactory in a few instances. All are agreed that the Wesbrook classification is of no diagnostic value for five- or eight-hour incubation periods when the organisms are stained in the ordinary way with Loeffler's methylene-blue.

The virulence test is made in some laboratories in cases of prolonged quarantine, and in a few instances on non-sick carrier subjects. One state institution conducts virulence tests of the organisms in all cases in which the duration of the quarantine is thirty days or over. Another conducts the test after five weeks. The isolation of the organism in pure culture is obtained by streaking on blood-serum. The animal used is commonly the guinea-pig. Death of the animal within four days after a subcutaneous inoculation, with localized necrosis at the sight of injection and successful recovery of the organism, is considered a positive test.

COMMITTEE ON THROAT CULTURES

AMERICAN MEDICAL ASSOCIATION

Sample Directions for Culturing

(Outfit contains two swabs in one test-tube and one culture-tube or culture-box.)

Throat Culture.—No local antiseptic application should be made for at least two hours previous to taking the culture. The patient's throat should be cleared of any adherent food particles, etc.

1. Have the patient in good light.
2. Rub the swab thoroughly against any membrane, exudate or inflamed area in the throat, revolving the swab in the fingers in such a way as to bring it thoroughly in contact with the suspected area.
3. *Do not lay the swab down* or allow it to touch anything other than the surface of the serum.
4. Insert the infected swab into the serum-tube and rub it gently back and forth over the entire surface of the serum, revolving the swab so as to bring it thoroughly in contact with the serum. Do not break the surface of the serum by pushing the swab through it. Do not use the medium if it is dry or contaminated.
5. Replace the infected swab in its own tube and replace the cotton plugs in both tubes.
6. Directions for sending to the laboratory.

Nasal Culture.—Cultures for release must be taken from both the nose and throat in all cases. Use one of the two swabs in the outfit for the nose and the other for the throat, rubbing both swabs on the same serum. Cultures for diagnosis may be taken from the nose alone or from the throat alone. If it is desired to take cultures for diagnosis from both the throat and nose, use a different serum-tube for each.

1. The physician should stand behind the patient, who should preferably be in a sitting posture.* Place the left hand on the patient's chin and hold the head firmly against the body of the operator. With the right hand insert the swab about one-half inch upward into the right nostril. Then raise the hand so that the shaft of the swab is parallel to the floor of the nose and with gentle rotation pass the swab back to the posterior pharyngeal wall. Withdraw the swab and repeat the process in the other nostril.
2. *Do not lay the swab down* or allow it to touch any object other than the surface of the serum.
3. Insert the infected swab into the serum-tube and rub it gently back and forth over the entire surface of the serum, revolving the swab so as to bring it thoroughly in contact with the serum. Do not break the surface of the serum by pushing the swab through it. Do not use the medium if it is dry or contaminated.
4. Replace the infected swab in its own tube and replace the cotton plugs in both tubes.
5. Directions for sending to the laboratory.

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Committee.

* If the patient's condition allows it.

Therapeutics

OBESITY

The first question to be considered in connection with this subject is what should be considered an excessive degree of fatness. This can be determined with a fair degree of accuracy for practical purposes from a consideration of the weight of the entire body. The weight of the bones, the muscles, and the viscera constitutes a nearly definite, but of course not exact, proportion of the weight of the whole body. The fluctuations in the same body during the different periods of life are mainly dependent on the increase or diminution in the amount of fat. It has been estimated that the proper weight of any individual may be determined by multiplying his height in inches by 2½. His minimum weight should not be less than twice the number of inches in his height, and his maximum weight should not exceed three times the number of inches in his height. Suppose, for example, a person 5 feet 8 inches in height; his minimum weight should not be less than 136 pounds, and his maximum weight not more than 204 pounds, while his ideal weight would be 170 pounds. But it must be remembered that the average weight varies in different decades, and many would consider these figures too high. Furthermore, it has been estimated that the fat of the whole body should constitute about 1/15 to 1/20 of the whole weight of the body. These figures give a fair index of when treatment should be undertaken.

Excessive fatness is seen in different kinds of subjects. First, there is the overfat person who is descended from ancestors one or more of whom have been unusually stout. That the tendency to fatness is frequently hereditary is indisputable, but it is difficult to understand why a special facility in the conversion of food into fat and its deposition in the body should be transmitted from parent to child. Second, there is the person who eats and drinks more than is necessary for his well-being, and yet who is apparently in good health aside from his fatness. Third, there is the person who eats more than is necessary, who exercises very little, and is anemic and has poor circulation and a weak heart.

The fat of the body is, theoretically, food which is changed into fat and is stored in convenient parts of the body to be used later on when necessity arises. Fat is the form in which reserve energy is stored in the body. It is believed that the chief source of the deposits of fat is the fats, the starches, and the sugars taken into the body as food, but it is probable that under certain conditions a part of the fat is formed from protein.

Undoubtedly the most common causes of acquired fatness are excessive eating, or the eating of excessive amounts, especially of foods rich in fat, sugar and starch. The habitual use of alcoholic drinks, especially of beer and ale, also promotes fatness, because they stimulate digestion and consequently assimilation. Furthermore, the alcohol furnishes material for oxidation, so that less of the tissues of the body undergo oxidation and removal.

An inadequate amount of exercise is another important contributing factor to this condition. Abundant exercise promotes oxidation and uses up a part, at least, of the surplus food which is ingested. People of sedentary habits ordinarily have a weak circulation, and this furthermore predisposes to sluggishness of the metabolic changes, lessened oxidation, and consequently increased deposition of fat.

The physiologic changes connected with the reproductive system are often attended by changes in the amount of fat in the body. Many children put on a large amount of fat during the second decade of their lives. Toward the end of this decade many of them lose a part at least of this excessive development. This is more apt to happen with boys than with girls. In the latter if the menstrual function is not established at the usual time and does not take place in a normal physiologic manner, the fatness often continues into and through adult life. In a somewhat similar way, after middle life, after the menopause in women in particular, and in men after castration, the weight is gradually increased, due to an excessive deposition of fat.

The excessive amount of fat present in the body is usually deposited about the breasts, shoulders, neck, and limbs in young people, while in older people it is deposited in the wall of the abdomen, around the hips, in the large omentum, and around the various abdominal and thoracic organs. Obesity occurs in children, but is most frequent in adults, in whom it is especially likely to make its first appearance toward middle life. It is rarely seen in very old people.

It is scarcely necessary to enumerate and describe the various systems of treatment which have been proposed and recommended for the cure of obesity. In undertaking the treatment of an obese patient, as in the treatment of all conditions, the first thing to do is to get a complete history. It should go without saying that the heart and lungs should be examined, and a thorough examination should be made of the urine. But special inquiry should be made of patients who present themselves for treatment for obesity in regard to the number and frequency of meals, and the food habitually taken at each meal; whether food is taken between meals; whether the food taken at meals is thoroughly chewed; whether it is eaten moist or dry; whether much fluid is taken with the meals, or between the meals; whether the patient takes exercise, when and how much he takes; and how willing he is to put himself to some inconvenience and perhaps discomfort to remedy his condition. Next the heredity should be discussed, and the age at which the weight began to increase above normal.

The next point to consider is, what result should be hoped for or should be aimed at in the treatment of the patient. By very great limitation of the diet the weight may be decreased rapidly, but a decrease in weight greater than two pounds in each week is not desirable, and is likely to be followed by dangerous results to the patient. While the patient is under treatment, his weight, with uniform clothing, should be taken and recorded every week, and the measurement of the circumference of his abdomen should be determined.

It is customary to consider the treatment of this condition under three heads: first, the diet; second, the exercise; and third, the medicine. Naturally the diet is considered first, as that is the foundation of the condition and of its cure. Various writers have given widely different advice in regard to what food should be allowed and what food should be forbidden.

Some have advised an exclusive milk diet in the treatment of obesity. This is not difficult to prescribe if the patient has confidence and is willing to follow the advice. While taking it the patient should be confined to bed, and should drink from two to three pints of milk a day. This treatment should not be continued for more than from five to ten days at a time, but may be repeated at intervals of two or three weeks. In many instances it has given very good results, but should not be advised unless the patient is under the constant observation of the physician.

The exclusively vegetable diet has been recommended by some writers. A strictly vegetable diet may be maintained for from four to six weeks, and then a small amount of meat may be allowed on alternate days. But a too restricted diet is usually not desirable.

While some allow the use of fat, it is fair to presume that the fat taken with the food forms the material most ready for transformation into fat in the body. Unless one disbelieves this, he will naturally advise his patient to abstain from fat of all sorts in his food. Cream, butter, the fat of pork, including bacon, and the fat of various forms of meat should be avoided. In regard to carbohydrates, the starches and sugars, these must be used in limited amount. It is better to reduce the sugar to a very small amount. Some advise forbidding it entirely and using saccharin in place of it for sweetening the food, but the utility of this course is, to say the least, questionable, and it is probably better to allow a limited amount of sugar for sweetening various articles of food which are habitually seasoned in this way. Starches should be reduced, but not entirely forbidden. If the history has been carefully taken, it will be learned whether the patient uses much potato or much bread. As these are the articles of diet which contain the greater part of the starch used, it will generally be found wise to diminish whichever of these two articles of food is chiefly used by the patient. It is in regard to the starches, sugars, and fats that the chief reduction in the amount of food taken should be used, but other foods should also be used in moderation, and particularly meat and eggs.

Much may be accomplished toward the reduction of the total amount of food taken by a regulation of the meals. In the first place, the taking of food between meals should be forbidden, and also evening lunches after the theater or before going to bed. The meals should be strictly limited to three. The breakfast, being with a large proportion of people a light meal, should be maintained in this way. As an example, for breakfast some fruit, as an orange or an apple, one or two eggs, with two not large pieces of bread or dry toast, and a glass of milk, or a cup of tea or coffee with a little milk and a very little sugar. Whole wheat bread or graham bread is less objectionable than white wheat bread. The other light meal is preferably taken at night, and should consist of a light supper, as for instance; a small piece of cold meat, one or two pieces of stale bread or dry toast, a salad of tomatoes, lettuce, or celery eaten without an oil dressing, and a glass of milk or a cup of tea or coffee, as at breakfast. The heaviest meal, the dinner, then, should be taken shortly after noon. It may consist of a light, watery soup, without the addition of flour and without any fat; meat or fish (fresh or salt) in moderation; potato; no bread; the various vegetables such as cabbage, spinach, cauliflower, turnips, carrots, parsnips, string beans; salad made of the various green vegetables which are in season; and a dessert of fruit such as strawberries in their season, peaches, oranges, grapefruit, apples, pears, and melons. The amount of liquid ingested with the food should be limited. All kinds of alcoholic liquors should be avoided. If the patient insists on taking an alcoholic drink, the least harmful are whisky and a sour wine like claret. It is perhaps wiser to allow no fluid with the meal, but to allow a single glass after the meal. Patients will eat less and will chew their food more thoroughly if they do not intersperse the mouthfuls of food with mouthfuls of drink. It is probably wise to limit the entire amount of

fluid taken in the twenty-four hours to six glasses; one glass taken shortly after each meal and the others from half an hour to an hour before the meal. Taking the glass of water before eating will lessen the appetite and be the means of the patient taking less food. If the patient is lithemic, more water is indicated.

It is important in prescribing different articles of food to consider the matter of the patient getting a sufficient amount of bulk in the food to cause the more or less agreeable feeling of distention in the stomach which generally leads one to think of ceasing to eat more. If a person is so stout as to suffer discomfort from the condition, it is a matter which should arouse the sympathy of the other members of the family, and they should be willing to submit to the slight inconvenience of having the food for the whole family arranged somewhat with reference to the person who is undergoing treatment. If this can be arranged it will greatly simplify the treatment and make it much less irksome.

The majority of people who suffer from obesity take too little exercise. The history of the patient will have shown to what extent this is true with the individual under consideration. It is necessary to find, if possible, some exercise which the patient will take systematically and continuously and which will not be too irksome. Practically the best exercise is walking. If the patient is not used to walking at all, he should commence walking a short distance several times a day. The exercise should not be carried to the point of undue fatigue. It should be taken after each meal, and should be gradually increased so that the patient walks six or eight miles a day. It may not be practicable to divide this equally among the three periods after eating, but the aggregate should be about up to that amount. The walking should not be a leisurely saunter, but should be a brisk, business-like walk; and the patient should not divest himself of too much of his clothing, because one thing to be sought by the walking is a moderate degree of perspiration. It is rather better to take the exercise after eating than before eating, because if taken before eating the patient's appetite will be so increased that he will desire an unusually large amount of food, instead of being satisfied with an unusually small amount.

Cold bathing is an excellent adjunct to the exercise by walking. It should be followed by a vigorous rubbing, which not only exercises the muscles, but promotes the circulation.

In warm weather swimming is a most admirable form of exercise, combining both the exercise of the muscles and the advantages of bathing. The warm bath is frequently recommended, but is far inferior to the cold bath in usefulness. The Turkish bath has been frequently recommended, but it is of little value, as it simply causes exudation of water from the body which is promptly replaced from the tissues or by the fluids swallowed.

If walking and bathing systematically are impracticable, much benefit may be obtained by systematic calisthenic exercises. These should involve especially the muscles of the legs, hips and abdomen, and should consist of various movements of flexion, extension and rotation. It is not easy to persuade patients to follow these with regularity, but if they are used in this way they are exceedingly efficient.

Drugs come last, and are of the least efficiency. Phytolacca has been recommended as a drug which has a specific influence on the deposition of fat, for it was observed by someone many years ago that birds who ate phytolacca berries were entirely devoid of fat. For this reason preparations of the phytolacca berries have been tried in obesity, but reports of its favorable action are few and inconclusive.

The use of various mineral waters has been highly commended by some writers in the treatment of this condition. Cathell has especially praised the taking after each meal of a glass of Kissingen water, alternating daily with Vichy water. He believes that this has some specific action on the metabolism of fat so that it is not deposited in excess. Cathartics have been used, especially the saline cathartics, with the idea that in this way the amount of food assimilated might be diminished, but this sort of treatment is liable to result in damage to the patient.

Unquestionably the secretion of the thyroid has an important relation to the deposition of fat. A diminished secretion of this gland is commonly accompanied by a tendency to fatness, and an excessive secretion often tends to produce emaciation. Hence it has been proposed to administer the extract of thyroid to patients who were too fat. The dose ordinarily recommended is 3 grains, two or three times a day. In many cases this has seemed to produce favorable results, but it must not be continued too long, and its action must be very carefully watched, so that it may be discontinued as soon as unfavorable symptoms appear.

What has just been said in regard to the treatment of obesity has had reference to robust, well-nourished people who are fat. When the patient is fat, but feeble and anemic, it is necessary to bear in mind certain considerations which must influence the treatment. If the patient is anemic, iron should be systematically administered, and will frequently prove very beneficial in improving the general condition, although of course it will not have any special effect on the obesity.

If the circulation is feeble and the heart weak, it will frequently be advisable to prescribe digitalis to improve the strength of the heart and the force of the circulation.

In regulating the diet it is necessary to avoid reducing this below the needs of the body for nourishment, and especially should caution be observed in reducing the amount of protein taken.

A few points of practical importance it is well to remember are the following:

1. The last meal of the day should be light because there is likely to be less demand made on oxidizable tissues during the night.

2. In prescribing a diet it is necessary to remember and include a sufficient amount of nourishment to maintain the strength of the patient.

3. While water does not materially increase the deposition of fat, if taken with meals it is likely to lead to excessive eating.

4. In arranging the diet consideration must be given to obtaining a considerable bulk of ingested material without at the same time taking an excess of the nutritious elements of food.

5. Alcoholic stimulants should be entirely prohibited.

6. Exercise should be carefully and specifically prescribed, preferably in the form of walking or swimming.

7. The patient should be regularly weighed and measured, so as to determine the results which are being obtained.

8. A diminution in weight should not be effected too rapidly.

9. In prescribing both medicine and food care should be taken to avoid bringing on indigestion, and with it serious impairment of nutrition.

10. The object of treatment is to maintain normal nutrition, and at the same time to avoid overnutrition.

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[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 16, 1911

HEATING AND VENTILATION

It has long been the custom of hygienists to insist that ventilation or perflation of crowded rooms is necessary in order to remove poisonous emanations arising from the human body. More than twenty years ago, however, observations made to determine the nature of the alleged poisonous properties of the expired air and of "crowd poison" led to negative results. No toxic organic constituent could be demonstrated in the air of crowded rooms, and as for the carbon dioxid, it was so relatively slight in amount that it could not be held responsible for the physiological effects observed, and could at most be regarded as "a measure of danger." To what, then, are due the disagreeable consequences of remaining in an overcrowded, poorly ventilated room? There can be no doubt that such consequences are real and not imaginary, and that they range all the way from slight depression and headache to severe nausea, vomiting and collapse.

The answer to a question that has caused much perplexity seems to have been given by various physiologic experiments of the last few years. To put it briefly, the whole trouble seems to be due to a disturbance of the normal thermal relations of the body. It is a common observation that the depression and fatigue experienced on a hot, humid August day are very similar to the feelings that develop in a crowded "close" room. The cause is apparently the same in both cases, namely, interference with the normal rate of loss of body heat. At least three atmospheric factors may be concerned in such interference: high temperature of the ambient air, high moisture content and lack of air movement. Paul[1] kept healthy persons for several hours in a close cabinet until the carbon dioxid rose to 100 or 150 parts per ten thousand—more than ten times the amount usually stated as "allowable"—but so long as the temperature and moisture content were kept low no symptoms of illness or discomfort developed. Other experimenters have reached the same result by simply having electric fans whirled in such an experimental cabinet. The motion these imparted to the air was sufficient to facilitate a normal, physiologic loss of heat from the body in spite of high temperature and humidity. Similar cabinet experiments in which the subject was enabled to breathe the fresh outside air through a tube, but was otherwise subjected to the conditions of a close room, likewise showed that the symptoms attributed to "bad ventilation" are in nowise due to poisons excreted in the breath. The upshot of all such experiments is that it is not the chemical constitution of indoor air that is injurious, but the overheating, the stagnation and sometimes the moisture content.

Among the more important recent papers dealing with this question may be mentioned especially an article by Crowder[2] on the ventilation of sleeping-cars. In addition to an admirable critical summary of the experimental evidence on the subject the article contains valuable data from the writer's own study of car ventilation. Much of the discomfort experienced by sleeping-car travelers is undoubtedly due, as Crowder suggests, to overheating and not to insufficient air-supply. Important practical results may be looked for in the field of ventilation as soon as engineers come to realize and to apply the knowledge gained by hygienists in the past few years. We are likely to hear less about "impure air" and more about stagnation and overheating.

All this does not, of course, mean that there is no harm in crowded rooms or that the open-air treatment of tuberculosis is based on false assumptions. The investigations cited merely substitute the right for the wrong interpretation of observed facts. Bodily resistance, as bacteriologists have shown us, may be lowered by a variety of factors. It might conceivably be diminished by the inhalation of "crowd poison," or by interference with the heat regulation of the body. The latter seems to be the true explanation of the undoubtedly injurious effect of overcrowded rooms. So far as tuberculosis is concerned, the predisposing effect of damp houses and damp climates is well known. The experiments recorded by the investigators mentioned above suggest that there are as yet undeveloped possibilities in the control of indoor climate. Precise knowledge of the factors concerned in producing the bad effects of overcrowding is the first step toward a scientific remedy for the condition.

1. Paul: Ztschr. f. Hyg., 1905, xlix, 405.

CHLOROFORM FOR THE DISINFECTION OF TYPHOID CARRIERS

The sanitary problem presented by the so-called "typhoid carrier" is one of great difficulty, and any steps leading toward its solution merit special consideration. For this reason, a recent article by Bully[1] on the disinfecting power of chloroform on typhoid infections of rabbits is of interest, although as yet it appears to have little practical applicability. The work of Bully is in large part an experimental review of a previous

2. Crowder, Thomas R.: Arch. Int. Med., 1911, vii, 85.

1. Bully: Ztschr. f. Hyg. u. Infektionskr., 1911, lxix, 29.

investigation by Conradi.[2] The latter started with the assumption that chloroform, or similar lipoid-solvent narcotics, should have a special affinity for cell and bacterial lipoids, and by virtue of this should be able to penetrate and destroy intracellular bacteria. Experimental work on animals confirmed this assumption, and later work by Hailer and Rimpau[3] lends it strong support, as does that of Bully. Bully's method consisted in inoculating rabbits intravenously with a culture of typhoid bacilli, and in following this with daily rectal injections of 0.5 c.c. of chloroform, in emulsion, for variable periods, at the end of which the animals and their controls were killed and examined bacteriologically. In all, the experiment was carried through on forty-two animals, with forty others serving as controls. The chloroform injections were begun at various intervals after the inoculation, and were kept up for periods ranging to a maximum of ten days. Of the forty-two animals so treated, five (15 per cent.) could be shown still to contain living typhoid bacilli. Of the forty control animals, nineteen (48 per cent.) were still infected. In all cases in which the organism was recovered, it was found in the bile; occasionally, but much less frequently, in the spleen as well.

It is evident that the administration of chloroform had definite effect on the disinfection of the animals. But the dosage, approximately one four-thousandths of the weight of the animal is for a substance like chloroform relatively enormous. Calculated for a man of average weight (70 kg.) such an amount would mean the daily administration of almost 18 gm., or over half an ounce, of chloroform—altogether too large a quantity to be given with assurance of safety. The experiment has been tried of giving human typhoid carriers chloroform in more moderate doses—up to 2 c.c. daily—without any appreciable effect on the typhoid bacilli in their stools.

While in all probability chloroform itself is too toxic for use as a disinfectant of chronic typhoid infections, possibly other substances of the same general class may be found that will be active within the limit of safe dosage. It is almost too much, however, to hope for the finding of any disinfectant capable of freeing the body of the organisms without itself having some injurious action on the host.

CHEESE AS A FOOD

Important observations regarding the food value of cheese, and its cheapness by comparison with some other dietary staples, are to be found in a government report,[1] which details exhaustive experiments made not only in artificial digestion, but also with human subjects, the office of experimental stations of the Department of Agriculture cooperating. The Cheddar or American cheese in various stages of ripening was studied, as were also some foreign kinds of cheese. From this publication we learn there is no warrant for the popular theory that cheese, even when green or unripened, is difficult of digestion; or that unripened cheese, or cheese in any stage of ripening, is constipating. There is a marked difference in the physical characteristics of the cured and green products; the water-soluble material in well-cured cheese is high, while in the uncured product it amounts to almost nothing; no doubt these evident physical and chemical differences have been largely responsible for the popular and established misconception above stated. The milk solids are very digestible and make an almost perfect food. With the addition of rennet, and the development of lactic acid in cheese-making, some chemical changes take place; but it is rather difficult to explain why these should transform digestible solids in milk into indigestible solids in cheese. Nor can the experimenters understand why any sort of cheese, green or otherwise, should tend to constipation; the cause of the idea is probably that many people are fond of the mild-flavored curd and eat large quantities of it when it is constantly at hand. The digestive disturbances attributed to peculiarities in the cheese itself are probably due merely to over-eating, or to the custom of eating cheese only at the close of the meal, when one has already had more than enough food.

Skim-milk cheese, when sold as a whole-milk product, is a fraud that is a positive injury to the dairy business; but skim-milk cheese, stated and sold as such, is entitled to consideration by both producer and consumer. It is digestible and has a food value; made to have an agreeable taste it could be sold cheaply to poor people. Cottage cheese is another cheap and palatable product, much of which could be added to the dietary at a great saving in the total cost of food. Indeed, all kinds of cheeses, even the very highly flavored and so-called condimental cheeses, have a high food value.

Cheese contains, in unusually concentrated form, every essential to human sustenance. It has been held by epicures to be a stimulant to digestion, when taken with the salad, or at the end of the meal. But we now learn that it is digestible both as a condiment, and as the chief factor in a meal. Many European people eat largely of cheese, either by itself, or sprinkled on vegetables, or cooked with other food. Here, as in some other matters, America may learn much from the Continent. The Italians have many foods, such as macaroni, with which cheese is mixed. They have cheese grated and constantly at hand as a flavoring, quite as we use pepper and salt. The Swiss eat largely of cheese, which with bread forms the greater part of the dietary of this very healthy people; and those Swiss farmers who have settled in Wisconsin continue to manifest the athletic attainments and the physical endurance of their forbears. The sensible Germans consume large quantities of the cheap, but

2. Conradi: Ztschr. f. Immunitätsforsch., u. exper. Ther., 1910, vii, 156.
3. Hailer and Rimpau: Arb. a. d. k. Gsndhtsamte, 1911, xxxvi.
1. Doane, C. F.: The Digestibility of Cheese, Circular 166, U. S. Department of Agriculture, Washington, D. C.

highly flavored skim-milk cheese, one popular kind of which is officially credited with "perhaps the most pungent odor of all the varieties of cheese made." The French also have some gorgeously flavored cheeses which the polite ask at table, not to have "passed this way," but to have "directed this way." Nevertheless such cheeses are wholesome; and their flavors are caused by beneficent microorganisms. One may here note the rejoinder to a gourmand who, having devoured some Roquefort, observed that, like Samson, he had slain his thousands and his tens of thousands: "Yes, and with the same weapon."

The consumption of cheese by the American people should be increased, on the grounds both of economy and of superior food value. A pound of cheese has nearly the same food value as two pounds of lean meat or eggs, or the same weight of ham. In comparing cheese with meat, it should be noted that not only is the former superior in food value as measured by the cost of an equal number of calories, but also it furnishes nitrogen without the accompaniment of purins which will increase the amount of uric acid in the system. For this reason, it may be eaten by those inclined to gouty affections to whom meat is denied.

THE CHARGE AGAINST DR. WILEY

II. THE INDIANA CASE

We continue this week[1] the publication of some of the testimony brought out before the congressional committee which investigated the Wiley matter. This time we deal with the Indiana case, which, as our readers may remember, created considerable talk some years ago. As our readers, of course, know, Indiana has a pure food law and a good one. One of its requirements practically prohibits the sale of foodstuffs preserved with benzoate of soda. Two of the largest catsup manufacturing concerns which preserve their products with this chemical—Curtice Bros., of Rochester, and Williams Bros., of Detroit—finding that their business in Indiana was being injured, attacked the pure food law of that state and attempted to have it declared unconstitutional. These firms naturally wished to present as strong evidence as possible and attempted to have the referee board—which had declared sodium benzoate innocuous—give testimony in their case favorable to its use. As will be seen by the evidence we quote this week, Secretary Wilson sided with these firms and urged members of the referee board to testify in their favor. This they did either by deposition or by personal appearance at the court in Indianapolis—and the United States paid their expenses!

Nor was this all. As is well known, Dr. Wiley also had carried out a series of experiments to determine the harmlessness or harmfulness of sodium benzoate. His work was done before the referee board was created or even thought of; it extended over a longer period of time than that given to the same subject by the referee board and it was, moreover, carried out under Dr. Wiley's personal supervision. As he said at the hearing:

> "I gave personal attention to this work and did not delegate it to other people. I was at the Bureau on the coldest winter mornings long before daybreak to supervise the preparation of the breakfast for these young men and was there late to see that the supper was properly prepared."

As a result of his experiments, Dr. Wiley declared sodium benzoate harmful, a position which he has consistently maintained. Naturally the Indiana state officials in defending their pure food law from destruction, wanted to have his testimony; they also wanted to be permitted to submit to the court the findings of Dr. Wiley in his experiments. Did the federal officials cooperate with the officers of the State of Indiana in the latter's attempt to get all the facts on both sides? No. On the contrary, the Indiana officials had the greatest difficulty in obtaining from the Department of Agriculture Dr. Wiley's data. When Solicitor McCabe learned that they wanted Dr. Wiley to testify, he submitted a decision to the effect that they could not compel the Chief of the Bureau of Chemistry to go to Indianapolis and that if he did go, it would be on his own responsibility. This, of course, was paramount to ordering Dr. Wiley not to give testimony that would support the Indiana pure food law. In fact, as will be seen by the evidence, McCabe admitted that he "did not want Dr. Wiley to testify in this case."

The attitude of Wilson and McCabe in the Indiana case is the attitude they have shown in every case in which the interests of the people and the interests of the manufacturers clashed. We wish we had space to quote all the evidence that was given before the congressional committee; we feel sure, however, that what we do give this week will prove interesting and instructive.

1. Propaganda for Reform Department, p. 991.

Current Comment

FRANCIS TRUTH—A DIVINE HEALER UP TO DATE

Mr. "Francis Truth," divine healer, has recently been arrested in San Francisco. This is no new experience with him, however, since he has undergone similar experiences at Jacksonville, Denver, New York and no doubt other cities. A brief "appreciation" may, in the circumstances, not be amiss. In March, 1895, a half-page advertisement appeared in newspapers, setting forth the wonderful powers of "Francis Truth." This was not the man's real name, but was assumed as indicating the chief and most resplendent trait of his mellow character; his actual name seems to be N. H. Bemis. There was a portrait of "Truth" gazing calmly upward, as one in the confidence of the Infinite. Above his refulgent countenance, crowned with impressive locks, was pictured "Truth's Temple of Divine

Healing," in Boston. To the right were the lame, the halt and the blind who, in great numbers, were coming to the Temple; to the left were those who had just seen "Truth." There was no sickness, no lameness among them now; no tuberculosis, no cancer, no leprosy—nothing but health! Naturally they were happy, and were felicitating one another. Below the portrait were represented the scores of stenographers, who were busy attending to "Truth's" heavy mail, which had been sent him by the suffering and the afflicted. "Truth" stated: "I have cured every disease known to man. Through me He has thought wise to rejuvenate the power of Divine Healing, after it has lain dormant for nearly two thousand years. Perhaps I merited it. I have always led a good Christian life." An enthusiast stated in this advertisement: "What a busy man Francis Truth is! The sacred power of Divine Healing which has been intrusted to him—to one man among the many billions of men—is a mission for the public weal that gives him little time for the society of his wife and baby, whom he loves devotedly." A few months before this "Truth" was working on a salary of some twenty dollars a week. He looked about to see how this could be bettered. It would seem that reports of the large profits being made by medical charlatans stimulated his imagination—an admirable one when it got to work. He set up a healing establishment of his own. Within a few weeks his enterprise assumed the proportions indicated in the advertisement here reviewed. Half-page advertisements, by the way, cost a good deal of money, especially when they are to appear in metropolitan newspapers. Very shortly afterward he was arrested on the charge of using the mails for fraudulent purposes. He pleaded not guilty, and was released on bail. His case came up for trial on July 10, 1900. He retracted his former plea, and changed it to "guilty." On five charges he was fined the maximum penalty for each; he paid the fines—$2,500 in all. He could afford it. Between the times of his arrest and of his pleading guilty over 30,000 letters addressed to him, about all of which were believed to contain money, accumulated in the post office. These were returned to their senders. It would appear that subsequently other communities have been even "easier" than Boston in which to do business of this kind.

CHARITY AND STAMINA

It has often been observed that living organisms require for their fullest development a certain amount of resistance in their environments. The individual or the species for which things are made too easy loses the unused function. The butterfly helped from its chrysalis has imperfect wings; the man fed on soft foods has bad teeth. The parasite is always a weakling and sometimes a degenerate monster. The parasitic dodder, which draws all its sustenance from the sap of the host, is a plant without a root or a leaf. The hermit crab, which, instead of growing a shell for itself like other crustaceans, makes use of the cast-off shells of mollusks, is atrophied in some of its members and enfeebled in its whole organism. So with the intellectual environment and the mental qualities of man. The pauper and the pampered child of wealth are alike deprived of those qualities of initiative and self-reliance on which their respective environments make no demand. Unnecessary charity is twice cursed; it curseth him that gives and him that takes; all of which goes to prove (if proof were needed) that abuse of medical charity is as bad for the public as it is for the profession.

Medical News

CALIFORNIA

Personal.—Dr. Anna M. Flynn, San Francisco, fractured her left leg, below the knee, in a fall of 30 feet down a quarry embankment, August 27.——Dr. Fred T. Bond has been appointed president of the board of health of Vallejo, and Dr. Edwin A. Peterson health officer.

Against Advertising Specialists.—The San Francisco Board of Health has recommended the passage of an ordinance prohibiting medical specialists from advertising. The board declares that: "The claims toward curing diseases which are made by this class of fraudulent so-called practitioners are but a lure to attract the innocent and inexperienced."

Permanent Home for Society.—At the meeting of the Board of Councilors of the Los Angeles Medical Association, July 17, a resolution was adopted, providing for the formation of a separate committee to be known as the Permanent Quarters Committee to have control of the funds set aside for permanent quarters for the association. The committee consists of the president and secretary, exofficio, and Drs. H. Bert Ellis, Los Angeles; Fitch C. E. Mattison, Pasadena, and Walter Lindley, Los Angeles. The association has already a nucleus in the form of a term deposit of $803.56.

ILLINOIS

Report on Health of Employees.—The manufacturing department of the Pullman Company is said to be the first of the large employers of the state to comply with the new occupational disease act, and file its report with the State Board of Health. The report shows that of 433 employees, 378 were healthy.

Personal.—Dr. Perry H. Wessel has succeeded Dr. August H. Arp, resigned, as health commissioner of Moline.——Dr. Emerson M. Brewer, Rantoul, has been appointed district physician for the Illinois Central System.——Dr. Tyler Meriweather, has succeeded Drs. Cassidy and William J. Chenoweth as local surgeon for the Illinois Central system at Decatur.——Dr. Harvey L. Hensley, Oakwood, who has been seriously ill with typhoid fever in Minnesota, has returned home.——Dr. A. Albert Absher, Sibley, had three ribs broken by the overturning of his automobile, August 30.——Dr. J. K. Egbert, Sycamore, has sailed for Europe.

Chicago

Medical Esperanto Association.—The American Medical Esperanto Association (American Esperanto Asocio Kuracistoj) has been incorporated by Drs. Jacob Frank, Isaac J. K. Golden, Paul Gronnerud and others, to promote the study of Esperanto.

Personal.—Drs. Ludvig Hektoen and Anton T. H. Holmboe received the honorary degree of doctor of medicine, in connection with the centennial jubilee of the University of Christiania, September 8.——Dr. and Mrs. Philip F. Shaffner have returned from Europe.

How To Keep Well.—Under this title Dr. William A. Evans, formerly health commissioner, is conducting a department of public health daily in the *Tribune*. This department is devoted to the dissemination of information as to right living and to the stimulation of public interest in the subject.

New Head of Tuberculosis Institute.—James Minnick has been elected superintendent of the Chicago Tuberculosis Institute and secretary of the Illinois State Association for the Prevention of Tuberculosis. Plans will be worked out at once for the organization of local societies, the preparation of a traveling exhibit, and the examination for tuberculosis of employees in manufacturing establishments.

Free Serum.—The health department has announced that it is prepared to furnish antirabies serum free to all persons whose circumstances will not permit them to pay for the treatment in private institutions. The serum comes from the

government laboratories at Washington. Physicians should send patients requiring this treatment to the Iroquois Memorial Hospital, 23 North Market Street, where they will be examined by the city's physicians and the health department notified. Individuals who have been bitten by dogs supposed to be mad will also be admitted to the hospital without direction from physicians.

INDIANA

Tuberculosis Cottage Dedicated.—The cottage at the Boehnue antituberculosis camp, Evansville, built and furnished by the local camp of the Woodmen of the World, was dedicated with appropriate ceremonies August 27.

Personal.—Dr. S. Kenosha Sessions, formerly a member of the staff of the Southern Indiana Hospital for the Insane, Evansville, has been elected superintendent of the Indiana Girls' School, Clermont.——Dr. Orion E. Maddox, Rockville, is reported to be seriously ill with ptomain poisoning.

City Takes Charge of Isolation Hospital.—At a meeting of the city council of South Bend, August 28, an ordinance was unanimously passed embodying the agreement between the commissioners of St. Joseph County and the city board of health, relative to turning the county isolation hospital over to the city. The agreement specifies that the city must provide a caretaker to be constantly on duty in the hospital, that patients from any part of the county shall be received at the hospital, and that no discrimination is to be shown in the treatment of the patients from different parts of the county.

Society Makes Recommendation Regarding Hospital.—The Knox County Medical Society at its August meeting made the following recommendations regarding the management of the Good Samaritan Hospital, Vincennes: That a medical superintendent be appointed, to be selected by the society and approved by the board of directors of the hospital; that he serve for a term of one year and be given the authority to appoint the head nurse; that he superintend the purchase of all medical and surgical supplies and appliances; receive and adjust all complaints, and that he be dean of the training school with full power to organize and superintend the same, and that the free use of the hospital be extended to the members of the society and their families.

IOWA

Personal.—Drs. J. Rea, William C. Kasten, John R. Walker, Charles F. Wahrer and France C. Roberts have been appointed by the Fort Madison Medical Association a committee of maintenance for St. Elizabeth's Hospital after the expiration of the term of the present board, September 15, until the Sacred Heart Hospital, now in course of construction, is ready for use.——Dr. William M. Morton, Iowa Falls, has moved to Southern California, and will be succeeded in practice by his youngest son, Dr. G. M. Morton, Marshalltown.

MARYLAND

Tuberculosis Dispensary Opened.—A dispensary for the free examination and treatment of persons afflicted with tuberculosis was opened in Federated Charities Building, Frederick, September 1. All the physicians of the city have offered their cooperation, and it is the intention of the local association to wage a vigorous fight against tuberculosis.

New State Hospital.—Sylvan Retreat, the Allegany County institution for the insane, is to be made a state hospital for the Western District of Maryland, embracing Washington, Allegany and Garrett counties. The institution has 102 inmates, of whom fifty-three are women. Eventually it is proposed to enlarge the hospital, creating male and female departments with industrial workshops.

Baltimore

Dr. Kelly Convalescent.—Dr. Howard A. Kelly, who was operated on recently in Rochester, Minn., is reported to be doing very well. Dr. Kelly had suffered from "dyspepsia" all his life, and recently the attacks became more acute, so that, while he was in camp, he decided to go at once to Rochester, Minn., where Dr. William J. Mayo operated, finding a badly-infected gall-bladder, with dense adhesions, especially of the duodenum, requiring two drainage tubes.

Personal.—Dr. Don P. Peters, for three years resident physician at the Church Home and Infirmary, has resigned and has been succeeded by Dr. Eugene Wright.——Drs. Harry Friedenwald and Joseph E. Gichner have returned from Europe.——Dr. Harry W. Stoner has recovered from a serious attack of septicemia.——Dr. Lewellys F. Barker sailed for Europe, September 2.——Right Rev. Luther B. Wilson, M.D., has returned after an absence of nine months in Africa, fully recovered from a fever which had lasted nearly ten weeks.

MICHIGAN

Medical Books Transferred.—On account of the overtaxing of the capacity of the Detroit public library, about 4,500 of its medical books have been transferred to the custody of the Wayne County Medical Society.

Sanatorium Notes.—Houghton County on August 22 awarded the contract for the construction of a county tuberculosis hospital, to cost $10,000.——Dr. Zell L. Baldwin is said to have been prohibited, by a restraining order, from maintaining a tuberculosis sanitarium in the residence portion of Niles.

Addition to a Hospital.—Ground has been broken for an addition to the Harper Hospital, Detroit, to cost about $400,000. The first building to be erected is to be six stories in height and of steel and cement construction. It is expected that the new addition will be ready for occupancy about Jan. 1, 1913.

Personal.—Drs. George L. Le Fevre and Frank W. Garber, Muskegon, sailed for Europe, August 26.——Dr. Charles L. Grube, formerly health officer of Saginaw, is reported to be seriously ill, as a result of overwork.——Dr. Ansel B. Smith, Grand Rapids, was operated on recently in Ann Arbor for appendicitis.

MINNESOTA

Home from Europe.—Drs. A. Torland, Minneapolis, and William C. Eichler, Underwood, have returned from Europe.

Hospital Dedicated.—Elliot Memorial Hospital, the first building to be completed on the new university campus, and the first and central building in the system of hospital buildings contemplated for the University of Minnesota, Minneapolis, was dedicated September 5.

Society Meeting.—At the annual meeting of the West Central Minnesota Medical Society, held in Morris, August 22, the following officers were elected: President, Dr. Amos Leuty, Morris; vice-president, Dr. J. G. Whittemore, Donnelly, and secretary and treasurer, Dr. Herbert L. Hulburd, Morris.

Association Merger.—At the joint meeting of the Southern Minnesota Medical Association and Minnesota Valley Medical Association, held at Rochester, August 3 and noted in THE JOURNAL of August 19, the associations were merged under the name of the Southern Minnesota Medical Association. It was decided that two meetings be held each year, the annual meeting to be held in Mankato, on the third Tuesday in January, and the semi-annual meeting on the first Tuesday after the first Monday in August, at such place as may be determined at the annual meeting. The following officers were elected to serve until the annual meeting: president, Dr. Louis A. Fritsche, New Ulm; first vice-president, Dr. John E. Crewe, Rochester; second vice-president, Dr. Hugh F. McGaughey, Winona; secretary, Dr. William T. Adams, Elgin; treasurer, Dr. George F. Merritt, St. Peter.

MISSISSIPPI

Fire in State Hospital.—Fire in the Mississippi Hospital for the Insane, Jackson, damaged the wards for negro inmates, several of whom escaped. Relatively little damage was done by the fire and all the patients were returned to the institution.

Personal.—Dr. and Mrs. Robert A. Strong, Pass Christian, have gone abroad.——Dr. J. E. Bayless, Hattiesburg, has been appointed health officer of Forest County, vice Dr. Lawrence B. Hudson, resigned.——Dr. Donald P. Street, Vicksburg, has been appointed local surgeon for the Yazoo & Mississippi Valley Railroad.

Cocain Use Among Negroes.—The Hinds County grand jury in its final report says: "The sale and use of cocain is alarming, principally among the negroes, who, in some sections of the county, when short of cash, have actually bartered their farm products for the drug. We trust good citizens will continue to assist the officers in rooting out this evil which is demoralizing labor and filling the jails with criminals."

MISSOURI

Personal.—Dr. John Punton, Kansas City, has returned from Europe.——Dr. J. R. Van Atta has been appointed pathologist by the hospital and health board of Kansas City.——Drs. David B. Robinson, Frederic C. Lamar, Fred B. Kyger, Frank C. Neff, William Marsh, Eugene P. Hamilton, James S. Hunter, Clarence S. Capell, Otho L. McKillipp and A. Isidor Anderson have been appointed physicians in the school inspection department of Kansas City.——Dr. Lynn G. Taylor has been appointed a member of the medical visiting staff of the Kansas City General Hospital, vice Dr. Arthur C. Leonard.

NEBRASKA

Ill and Injured.—Dr. George A. Byers, Snyder, sustained a fracture of the skull and other serious injuries by overturning of the automobile between Snyder and Scribner.——Dr. William M. Thomas, Beatrice, is seriously ill with typhoid fever.

New Medical Staff Appointed.—At the annual meeting of the directors of the Wise Memorial Hospital, Omaha, the following medical staff was appointed: Drs. Oscar S. Hoffman, Charles C. Allison, Robert Gilmore, John E. Summers, Byron B. Davis, August F. Jonas, James S. Goetz, Charles W. Pollard, Frank S. Owen, Abraham Romm, Adolph Sachs, Henry B. Lemere and Bernard A. McDermott.

NEW YORK

Personal.—Dr. James W. Russell, first assistant physician at the Willard State Hospital, has been appointed for similar position at the Matteawan State Hospital and Dr. William J. Tiffany, Binghamton, second assistant physician at the Binghamton State Hospital, has been appointed a member of the staff of the Matteawan institution.——Dr. Harley Heath, Albany, has been appointed physician of the Great Meadow Prison, Comstock.——Capt. Charles W. Farr, M. C., U. S. A., retired, Elmira, has been appointed physician at the State Prison, Sing Sing, vice Dr. Fred E. Lettice, resigned.——Dr. Fred M. Meader has succeeded Dr. W. W. White as city bacteriologist of Syracuse.——Dr. George Lenz has been elected president and Dr. E. D. Hagedorn secretary of the medical staff of the Nathan Littauer Hospital, Gloversville.

New York City

Dinner to Italian Physician.—The Italian Medical Society of New York gave a testimonial dinner to Prof. Dr. P. G. Spinelli, professor of gynecology in the University of Naples, September 4. Dr. Spinelli is making a study of hospital conditions in the United States with especial reference to gynecology and surgery.

Personal.—Dr. Theodore C. Janeway has been elected a member of the board of scientific directors of the Rockefeller Institute for Medical Research, vice Dr. Christian A. Herter, deceased.——Dr. J. Conger Bryan is said to have been committed for five days to the psychopathic ward of Bellevue Hospital, September 2.

Glasgow Physician Guest of Society.—On the occasion of the visit to New York City of Dr. Albert A. Gray, Glasgow, a meeting is to be held at the New York Academy of Medicine, September 20, under the auspices of the Eastern Medical Society of New York, which the medical profession is cordially invited to attend.

Reduction of Infant Mortality.—The Committee for the Reduction of Infant Mortality, satisfied with the results of the allied agencies in their warfare against diarrheal diseases this summer, plans now to turn its attention to a demonstration against the deaths of babies due to congenital troubles. Diarrheal or gastro-intestinal diseases cause about 38 per cent. of all infants' deaths. Congenital troubles, however, are second with about 17 per cent. of the total. Remarkable success has been attendant on the efforts against diarrheal diseases this summer as the figures given out week by week from the board of health attest, but in order to reduce infants' deaths to an unpreventable point, other causes must be attacked with equal intelligence. Special attention is now to be paid by the committee to 1,000 mothers who await the arrival of offspring, in an endeavor to bring to bear all of the community's resources which will enable the mothers to give to the world well children, strong enough to combat the many foes which city life has reared to assail them on every hand. An intensive study is to be made of these 1,000 cases preliminary to a genuine campaign along these lines next summer. Already the committee has begun this task and has 500 expectant mothers under the guidance of its nurses. An arrangement has been made with the Russell Sage Foundation which will detail a special nurse to devote all of her time to this work. The number of expectant mothers under guidance will be increased at once by another 500. All of the mothers will first be given a careful physical examination in order to detect disease or other ailments dangerous to the welfare of the coming child. In the meantime, the nurses will be instructing the women in methods of proper care of themselves, preparatory to the coming of children. The beneficial results of exercise are to be pointed out, a proper diet, regularity of sleep and freedom from worry prescribed. Whenever an expectant mother is forced to overwork, help will be provided for her that she may save her strength to give to the coming child. The use of drugs, beer and whisky are strongly advised against. The nurses are to make arrangements for the women to go to hospitals in ample time. If they do not care to do this, a physician is to be provided and proper nursing. No midwives are to be allowed to handle any of the 1,000 cases which the committee proposes to direct. The wishes of nationalities, such as the Italians, who do not like to have men doctors in attendance on confinement cases, will be respected and women physicians provided for them. After confinement rest will be provided for the mothers and the children referred to the milk stations. The babies born will be watched with extreme care during the first month and a careful record of results. Last year about one-third of all infant deaths occurred among children who were not yet 1 month old. The committee will endeavor to prove from the 1,000 cases that this one-third can be materially lowered. If the study prove this to be true an active general campaign will be undertaken next summer along these lines. A circular is also ready to deliver among expectant mothers, giving them information concerning the proposed work and instructing them how they may best give birth to healthy children.

OHIO

City Official Assaulted.—Dr. Sample B. McKerrihan, city physician of Portsmouth, while carrying out his official duties respecting quarantine of a house in which a child was ill with diphtheria, was dangerously wounded by the father of the child, August 22. His assailant has been charged with assault with intent to kill.

Ill and Injured.—An attempt was made August 28 by an inmate of the Ohio Soldiers and Sailors' Home, Sandusky, to shoot Major John Haynes, chief surgeon of the institution.——Dr. Louis H. Frechtling, Hamilton, was operated on for appendicitis, August 23, in Mercy Hospital.——Dr. James J. McClellan, Columbus, is reported to be improving.——Dr. John W. Nixon, New Philadelphia, was seriously injured in a runaway accident, August 15.

Personal.—Dr. Charles O. Probst, Columbus, for twenty-five years secretary of the state board of health, sails September 28 for Vienna.——Dr. John C. George, assistant physician at the Dayton State Hospital, has been selected superintendent of the Miami Valley Hospital.——Dr. E. A. Baber, assistant physician at the Dayton State Hospital, has been appointed superintendent of that institution, vice Dr. Arthur F. Shepherd, Dayton, who becomes a member of the State Board of Control of Ohio Institutions.——Dr. Frank McCafferty has been appointed a member of the Columbus board of pension examining surgeons, vice Dr. James U. Barnhill, deceased.

PENNSYLVANIA

Personal.—Dr. Malcolm Z. Gearhart, Reading, who was operated on in Jefferson Hospital for appendicitis, is recovering.——Dr. Augustine C. Luhr, formerly of Philadelphia, has moved to St. Mary's.

Fourth District Meeting.—About seventy physicians from Lancaster, Lebanon and Dauphin counties met at Mount Gretna, August 30, for the annual meeting and outing of the Fourth Censorial District Medical Society. Notwithstanding the cold and rain which prevailed the members kept up their spirits and the meeting was very successful. The following officers were elected: president, Dr. John B. MacAlister, Harrisburg; vice-president, Dr. Hugh Hamilton, Harrisburg, and secretary, Dr. Dewitt C. Laverty, Middletown. New by-laws were adopted, one of which changes the name of the association to the Association of Physicians of the Fourth Censorial District of the Medical Society of the State of Pennsylvania. Resolutions were unanimously adopted commending Dr. Harvey W. Wiley for his course in the war against adulterated foods.

Philadelphia

Back from Europe.—Drs. Howard F. Hansell, Judson Daland, S. Lewis Ziegler and Harvey Shoemaker have returned from Europe.

Spinelli in Philadelphia.—Dr. Pier Giuseppe Spinelli, professor of gynecology in the University of Naples, Italy, was the guest of honor at a reception given by the Italians of this city, September 8. He remained for a week, visiting the clinics of the various hospitals.

Gifts to Hospitals.—The will of the late Elizabeth C. Reakirt includes contingent bequests of $10,000 to the Children's Hospital under the care of the Ministerium of the Lutheran Church and of half of the residue of her estate to the German Hospital.——Dr. Gertrude A. Walker has given $1,000 to endow a baby's bed in the maternity of the Woman's Medical College Hospital.

Sterilizing Plant for Marcus Hook.—On September 8, the State Quarantine Board awarded a contract to the Kensington Engine Works to install a steam sterilizing and formaldehyd plant at Marcus Hook for $3,305. The plant will be able to sterilize 200 blankets at one time.

Typhoid Checked.—Typhoid fever in the Twenty-Second and Thirty-Second wards has been traced to the infection of milk from cows that were watered in polluted streams. The cases in the Thirty-Second Ward caused the city authorities much alarm as that section of the city is supplied with unfiltered water. Investigation showed, however, that the water while cloudy contained no infection. The residents of this section have presented a petition to city councils demanding that the work on the Queen Lane filter plant be rushed to completion.

SOUTH CAROLINA

Personal.—Dr. Morris J. Alexander, Tunica, has been appointed clinical assistant in pediatrics in the Medical College of Virginia, Richmond.——Dr. Frank B. Sanders, Hagood, has been appointed physician to the Minnesota state reformatory, St. Cloud.——Dr. A. M. Wylie has been appointed city physician of Chester.

TENNESSEE

Health Talks in Nashville.—The Public Health Department of the General Federation of Women's Clubs announces the following topics for use by all federated clubs in Nashville and by the organizations of women which desire to cooperate: October, "Community Health: Know-Your-City Campaign;" November, "Social Hygiene: Education in Home and School;" December, "Tuberculosis: Ventilation and Fresh Air;" January, "Mouth Hygiene: Tooth Inspection Day;" February, "Clean Food: How and Where to Find It;" March, "School Hygiene: Medical Inspection;" April, "Conservation of Vision: Prevention of Blindness;" May, "Infant Mortality: Don't Kill Your Baby," and June, "Food Sanitation: Needless Summer Dangers."

WISCONSIN

Work Starts on County Asylum.—Work was started September 11 on the new Shawano County insane asylum, Shawano. The building will be completed within a year.

Personal.—Dr. Robert A. Kitto, Racine, was seriously injured by being run down by an automobile, August 30.——Dr. Arthur H. Sanford, professor of physiology in Marquette University, Milwaukee, has resigned to take charge of the laboratory of the Drs. Mayo, Rochester, Minn.——Dr. Willard A. Pease, Rio, who was operated on recently for appendicitis, is reported to be securely convalescent.

GENERAL NEWS

Southwestern Physicians to Meet.—The Southwestern Medical Association, which includes the states of Missouri, Kansas, Oklahoma, Arkansas and Texas, will hold its annual meeting in Oklahoma City, October 10 to 12.

Annual Meeting of Missouri Valley Medical Association.—At the annual meeting of the Missouri Valley Medical Association held in Omaha, September 7 and 8, the following officers were elected: president, Dr. John M. Bell, St. Joseph; vice-presidents, Drs. Arthur C. Stokes, Omaha, and Dr. S. Grover Burnett, Kansas City; treasurer, Dr. Oliver C. Gebhart, St. Joseph; secretary, Dr. Charles Wood Fassett, St. Joseph. Colfax, Ia., was selected as the next meeting place.

Medico-Actuarial Investigation.—The medico-actuarial investigation which is now being made under the auspices of the Actuarial Society of America is a most important one. The experience of companies from 1885 to 1908 is being tabulated. The scope of the investigation included a study of sixty-eight groups of occupations involving hazards and seventy-six of medical impairments. The figures are being tabulated in order to provide an accurate standard of heights and weights, and to determine the influence of build and occupation on longevity.

Cumberland Valley Physicians' Meeting.—At the ninth annual meeting of the Cumberland Valley Medical Association, held at Mount Holly Inn, near Carlisle, Pa., August 31, the following officers were elected: president, Dr. W. Frank Skinner, Chambersburg; vice-presidents, Drs. John C. Gilland, Greencastle; Luther H. Keller, Hagerstown, and David W. Van Camp, Plainfield; secretary, Dr. John J. Coffman, Scotland (reelected for the tenth time); assistant secretaries, Drs. Leslie M. Kauffmann, Kauffmann, Pa.; John R. Laughlin, Hagerstown, Md., and Edward Roberts Plank, Carlisle, Pa., and treasurer, Dr. R. P. Koons.

Societies to Meet.—Among the society meetings that are to occur in September are the following:

Amer. Acad. of Ophthal. and Oto-Laryngol., Indianapolis, Sept. 25-27.
Amer. Assn. of Obstet. and Gynecol., Louisville, Ky., Sept. 26-28.
American Roentgen Ray Society, Richmond, Va., Sept. 20-23.
American Urological Association, Chicago, Sept. 26-27.
Assn. of Military Surgeons of United States, Milwaukee, Sept. 26-29.
Indiana State Medical Association, Indianapolis, Sept. 28-29.
Michigan State Medical Society, Detroit, Sept. 27-28.
Pennsylvania State Medical Society, Harrisburg, Sept. 25-28.
W. Va. State Med. Assn., White Sulphur Springs, Sept. 20-22.

Electrotherapeutic Association Meeting.—The twenty-first annual meeting of the American Electrotherapeutic Association was held in the College of Physicians, Philadelphia, September 5-7. The following officers were elected: president, Dr. William D. McFee, Haverhill, Mass.; vice-presidents, Drs. F. Howard Humphris, London, Eng., and George E. Pfahler, Philadelphia; treasurer, Dr. Emil Heuel, New York City; secretary, Dr. J. Willard Travell, New York City; registrar, Dr. Frederick M. Law, New York City, and trustees, Drs. Frederick deKraft, Haverhill, Mass., and Francis B. Bishop, Washington. The next meeting will be held in Baltimore in September, 1912.

CANADA

Academy Moves.—The Toronto Academy of Medicine has moved into large and commodious quarters in Queen's Park.

"King Cook" is Dead.—James Cook, who was known as "King Cook" to thousands of graduates of the medical department of McGill University, Montreal, and who for forty years was janitor in that institution, died August 15.

Hospital Notes.—The pathologic wing of the new Toronto General Hospital is almost ready for occupancy.——The new hospital for the insane at Coquitam, B. C., is progressing rapidly toward completion.——St. Mary's Hospital, New Westminster, B. C., is to be enlarged at an expense of $20,000.

Society News.—The Maritime Medical Association has voted itself out of existence, the step being taken in the interests of the Canadian Medical Association.——The British Columbia Medical Association held its annual meeting at Vancouver, August 30 and 31.——The first annual meeting of the Canadian Public Health Association will be held in Montreal, November 21 to 23.

Tuberculosis Sanatorium Open.—A new sanatorium for consumptives at Ste. Agathe des Monts, was recently opened. The institution is situated in the Laurentian mountains and is a little more than 100 miles from Montreal. The building is modern, the equipment admirable and the institute has at the present time a capacity of fifty beds. It has been erected by and is maintained under the auspices of the Laurentian Society.

Montreal Death Rate.—The death-rate in Montreal in 1910 was 22.40 per 1,000 as compared with 22.03 for 1909. There were 10,221 deaths during the year, 16,616 births and 4,386 marriages. In 1907 there were 919 deaths from tuberculosis; in 1908, 1,000; in 1909, 1,114; in 1910, 1,336, the increase being probably due to more complete returns. During 1910 8,749 cases of communicable diseases were reported.

Personal.—Prof. Dr. J. George Adami, Montreal, has started for the tuberculosis conference in Rome.——Dr. William Warwick has resigned as pathologist at the General Hospital, St. John, N. B.——Drs. Alexander S. Monro, Vancouver, John N. Elliott Brown, Toronto, and Dr. Duncan Graham, Toronto, have returned from Europe.——Drs. Charles O'Reilly, Toronto, and John H. Leeming, Winnipeg, have started for Europe.——Dr. Bruce of London, England, has been appointed superintendent of the London (Ont.) Tuberculosis Hospital.——Dr. J. Wilfrid Good, Winnipeg, was operated on recently at Rochester, Minn.——Dr. Duncan Graham has been appointed lecturer on bacteriology at Toronto University.

Tuberculosis Sanatoriums in Canada.—Dr. Charles D. Parfitt, Gravenhurst, Ont., reports in the *Dominion Medical Monthly* for August that there are now more than twenty tuberculosis sanatoriums in Canada. The movement was initiated in 1897. Twelve of these sanatoriums are in Ontario with a capacity for 547 beds, and treated during the last year 1,421 patients. It is estimated that there are at present in Ontario 10,000 cases of active tuberculosis and that 171,000 of those now living in the province will die from tuberculosis at the present rate. The death-rate from tuberculosis has diminished in Ontario and this, Dr. Parfitt believes, demonstrates and shows the value of sanatoriums. In 1897, when the sanatorium movement began the death-rate was 150 per 100,000, while in 1908 the rate from this cause was reduced to 112 per 100,000. The percentage of death from tuberculosis in 1908 was 7.7, which compares favorably with the rate of 11.0 which was reported in 1901.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 2, 1911.

Annual Exhibition at the Royal College of Surgeons: The Prehistoric Races of Europe

Among the specimens added to the Museum of the Royal College of Surgeons, shown at the annual exhibition which has recently been opened, is one of unusual interest to those who are investigating prehistoric races. Hitherto no remains of a Bushman-like race have been found in Spain or France. However, during last winter Col. Willoughby Verner discovered in an unexplored cave in Spain fragments of the skeleton of a man covered by stalagmite and fossilized, of pigmy stature (4 feet 10 inches) and showing decided affinities to the Bushman type. Colonel Verner presented these remains to the museum, where they may be seen side by side with nine skeletons of Bushmen excavated from old graves in the Kalahari Desert. Prehistoric research is showing how abiding some of the types of mankind are, but it will be a remarkable revelation if it shall be finally proved that in the almost extinct race of South-African Bushmen we have representatives of the natives of Spain at the close of the glacial epoch. The Bushmen, the most specialized and peculiar of the negroid races, show a curious mixture of the adult and juvenile characters in their skeletons.

The Incidence of Anthrax

In spite of every precaution which science can suggest and a benevolent government enforce cases of anthrax continue to occur among workers in skins and hides. An important report on the incidence of anthrax and the means of preventing the disease has been presented to the Company of Leathersellers by Dr. Constant Ponder, bacteriologic assistant at the Leathersellers Company's Technical College. He finds that about 40 per cent. of all cases of anthrax that occur are due to handling Chinese or East Indian goods. Cutaneous infection is the most common, pustules on the head or neck occurring in 82 per cent. of the cases. No case of pulmonary anthrax, such as occurs among the Bradford woolworkers, has been observed in the workers in skins and hides and only two cases of intestinal anthrax in the last seven years. The point of greatest importance made by Dr. Ponder is that the anthrax spore is most likely to be found in discharges dried on fur or in blood spilled when the animal was flayed, and dried on the fur, and at the cut end of cutaneous capillaries. Hence the problem is how to destroy the spores when protected by a thin layer of blood, mucus, or fecal material without damaging the hides. Having studied the methods suggested from time to time at home and abroad Dr. Ponder recommends one based on the fact that no case of anthrax has ever been traced to wet, salted hides. He therefore recommends that all hides and skins should be imported in this state.

The same result can be achieved, adopting the method suggested by Mr. Seymour Jones, chairman of the International Commission for the Preservation, Cure and Disinfection of Hides and Skins. By this method the hides are practically converted into the wet salted state. They are soaked for twenty-four hours in a solution containing 1 per cent. formic acid and 0.02 per cent of mercuric chlorid and then transferred to the ordinary brine bath. This method destroys infection and does not interfere with the subsequent transformation of hide into leather.

The Dangers of Flannelette

Scarcely a day passes without a record in the press of some sad fatality, of which a helpless child is generally the victim, due to clothing made of flannelette catching fire. And yet, in spite of the verdict of a special home office commission, which investigated the matter, and that of coroners and juries throughout the country, who unite in condemning this material (which becomes more and more dangerous each time it is washed) no steps have yet been taken to decrease the heavy annual death-roll from this cause. In a pamphlet with the above title, the National League for Physical Education and Improvement makes out a strong case for legislation, basing its facts on evidence taken from blue books, on statements made by coroners, and on an independent investigation, recently carried on at the league's instigation by the *Lancet*. Deaths from burning, especially among children, are shown to be on the increase, and it is computed that of these deaths no less than a thousand a year in the United Kingdom may be ascribed to the fact of the victim having been clothed in ordinary flannelette. Nor is this surprising, when one realizes that if a child's flannelette garment becomes ignited that child is doomed if no person arrives within about three seconds to save it.

Some manufacturers appear to be alive to the dangerous nature of flannelette and are trying to remedy matters by making it with a short, close nap. But even this is not, according to the *Lancet's* tests, as trustworthy in regard to safety from fire as flannelette which has been treated by a lasting, chemical, fire-proofing process. Such flannelettes have been on the market for some time now. The danger to the public, however, lies in the fact, as proved by the *Lancet*, that not only is flannelette still sold at large with no pretensions to being non-inflammable, but flannelette is also sold which wrongly claims to be non-inflammable.

Here then, as a first step, is where legislation is urgently needed. It should be made penal, as recommended by the home office commission and the Lancet, to describe as uninflammable materials which will not stand certain prescribed tests for inflammability.

Tuberculosis Among Railway Clerks

An investigation of the prevalence of consumption among railway clerks has just been completed by the Railway Clerks' Association. It is found that 42 per cent. of the deaths among these clerks are due to the disease as compared with 25.8 in the general population. The officials of the association express the view that consumption is an occupational disease, which is encouraged by the unhealthy surroundings in which many railway clerks are obliged to work and that much could be done if the standard of sanitation and ventilation imposed under the factory acts were made obligatory in railway booking and other offices. A bill has been prepared with this object and will be presented to Parliament in due course. One of the large railway companies, the Midland, has decided to give immediate effect to some of the recommendations for checking the growth of the disease and have announced that when clerks are attacked they will allow six months leave with full pay.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 25, 1911.

Death of Professor Dieulafoy

Dr. Georges Dieulafoy, former professor of clinical medicine at the Faculté de médecine de Paris, has just died rather suddenly, aged 62. He was born in Toulouse and first studied medicine at the Ecole de Médecine of that city. Then he came to Paris, where he became the favorite pupil of the celebrated clinician, Trousseau. He received his doctor's degree in 1869, and was appointed *agrégé* professor in 1875. Twelve years later he obtained the chair of internal pathology at the Faculté de médecine de Paris. He was at first physician at the Necker hospital, and in 1869 went to the Hôtel-Dieu as professor of clinical medicine where he succeeded his master, Trousseau. In 1891 he was elected member of the Académie de médecine and was later chosen president of the academy. He had retired from his professorship two years ago.

The first work by which he became well known was his treatise on the aspiration of morbid exudates, published in 1873. Dieulafoy's aspirator has for a long time been employed for the evacuation of pleuritic fluids. Dieulafoy also drew the attention of physicians to the signs of obscure diseases and in particular to those of the insidious condition which he called *petit brightisme*. In later years he was occupied, with an evident predilection, with medicochirurgical questions, such as the treatment of appendicitis, early operations in ulcerating gastritis and diseases of the liver, kidney, etc. Dieulafoy's principal claim to distinction rests on his "Manual of Internal Pathology" from which many generations of students have been taught and which has gone through sixteen successive editions since 1880. He also issued the "Clinique médicale de l'Hôtel-Dieu" in six volumes.

Dieulafoy was not a laboratory man, but his remarkable facility for assimilation permitted him to put himself rapidly in touch with laboratory discoveries and to use them in his teaching. What especially contributed to his success as an instructor, however, was his great facility of language—his oratorical ability. It might even be said that his eloquence carried him a little too far sometimes. He was a little too fond of formulas. Thus about twelve years ago he made a sensational communication to the Académie de médecine which was summed up in the striking epigram that "no one ought to die of appendicitis," which is as much as to say that appendicitis should be operated on immediately in every case. Surgeons naturally hastened to follow his advice to such a

degree that in 1906 Dieulafoy again mounted the tribune of the Académie de médecine, this time to reproach surgeons with operating too much. Many people merely affected with mucomembranous typhlocolitis, he said, were unnecessarily operated on for a non-existent appendicitis.

The Twenty-First Congress of Alienists and Neurologists

The twenty-first Congrès des médecins aliénistes et neurologistes de France et des pays de langue française was held August 1 to 6, at Amiens. It was not so successful as in previous years, owing perhaps to a defect in organization. The sessions of the congress were scattered in a way, being held now at Amiens, now at Boulogne-sur-Mer and now at the asylum of Prémonté, the members of the congress having to go to these various places at their own expense, which more than doubled the usual cost of 20 francs ($4). Another more important cause of unsuccess to which Dr. Deny, physician of the Salpêtrière and president of the congress, called attention in his opening address, consists in a certain coolness between the neurologists and alienists. This is due perhaps to the fact that psychoneuroses form a kind of debatable ground. Three interesting questions were considered.

VALUE OF LEGAL EVIDENCE GIVEN BY PERSONS OF UNSOUND MIND

Dr. R. Lalanne, head physician at the insane asylum of Maréville, Nancy, showed how the ordinary variation of evidence emphasized by recent researches in experimental pathology, the disturbances of perception (illusions, sensorial disturbances of the aged, etc.) gradually lead onto pathologic ground—to the evidence of persons of unsound mind whose mental disturbance is not suspected by the public or by the judges. The value of the evidence of these unsuspected insane persons is essentially variable. Lalanne, therefore, insisted particularly on the utility of having the judges rely on the assistance of a psychiatrist whenever they suspected a morbid mental condition in the witness. The expert should not pass on the evidence itself. He should confine himself to declaring whether the condition of the witness' mind is or is not such as to cast doubt on his evidence.

On the motion of Dr. Rémond of Toulouse, the congress passed two resolutions, one declaring that the evidence of any person who is or has been mentally unsound should be legally declared under suspicion, and the other emphasizing the value for judges of a course including medicolegal psychiatry.

Professor Ladame of Geneva drew attention to the severity of the law against perjured testimony. Since there are undoubtedly many psychopathic persons among the public at large, he offered a resolution which was passed to the effect that before conviction for perjury the court should have the mental condition of the perjured witness examined. The congress also passed a resolution offered by Dr. Ley of Brussels demanding that the methods of psychologic experiment should be used to test the evidence given by the insane.

TUMORS OF THE PITUITARY

Dr. Courtellemont of the Ecole d'Amiens divides the symptoms which indicate tumors of the hypophysis into results of the mechanical disturbances (signs of cerebral compression, properly speaking, headache, vomiting, vertigo, nerve compression and especially ocular troubles, etc.), and dystrophic conditions. As for the latter the present tendency is to attribute acromegaly and gigantism to the hyperfunction of the gland, and the adipose-genital syndrome to the hypofunction. There would thus be opposition between the two syndromes of hypofunction and hyperfunction. From the therapeutic point of view it seems certain that we are no longer helpless with regard to pituitary tumors. Even though opotherapy appears to be only a symptomatic treatment, radiotherapy has given very appreciable functional and physical results. In particular it diminishes the phenomenon of encephalic compression and ameliorates visual troubles. Partial hypophysectomy has given very good results in the hands of von Eiselsberg, Hochenegg, and others. It alone of all the therapeutic methods seems to have succeeded in causing the regression of acromegalic deformities. Nevertheless, in view of the still very formidable seriousness of the operation, Dr. Courtellemont thinks that it should be reserved for cases which resist opotherapy and radiotherapy.

Dr. Paul Sainton of Paris emphasized the special characteristics of glycosuria in cases of tumors of the hypophysis. The proportion of sugar is much higher than in other glycosurias of nervous origin. Moreover the glycosuria is accompanied by all the symptoms of real diabetes, polyuria, polypnagia, polydypsia, so that the expression, "hypophyseal diabetes" is entirely justified. These facts should be compared with the cases of diabetes in that other syndrome of hypofunction, namely, Basedow's disease (hyperthyroidism).

THE VARIOUS CLASSES OF PSYCHOPATHIC PAINS

The most important part of the paper presented by Dr. G. Maillard, assistant physician at the Salpêtrière, is the therapeutic portion. Should operation be performed for psychopathic pains? A distinction should be made among these. If there is an important lesion which in itself is an operative indication, evidently operation should be done and it may be hoped that the pain will disappear or at least a remission or attenuation be obtained according as the psychic or organic factor predominates. In cases in which there is no organic lesion apparently capable of producing psychopathic pains no operation should be done. Operation, real or pretended, would serve no purpose and in pains of paranoiac origin such operation would only furnish new ground for delusion. But between these two extreme cases there are many intermediary cases in which the proper course to follow is open to discussion. These are the cases in which the psychopathic pains seem connected with a lesion which in itself does not absolutely require operation but in which an operation would be justified as thereby the pains might be made to disappear. These embarassing cases are found, for example, in displacements of organs, movable kidney, uterine prolapses, etc. In such cases to try to do the best for the psychic condition and for the lesion is often very difficult. If the pain is a manifestation of a hysterical organic association the best chances of improving the condition of the patient or of effecting a cure are to be found in appropriate surgical measures together with psychotherapeutic measures.

Dr. Picqué of Paris emphasized the fact that a cerebral condition of the patient may constitute a contra-indication against an operation which would be indicated in patients whose mental condition is normal. Of course, in urgent cases operation should be done whatever the mental condition of the patient. But in elective surgery (for example, early operation on uterine fibromas), the mental condition should be reckoned with. Picqué believes that before any operation the mental condition of the patient should be examined as regularly as the urine.

PAINS AND PSYCHIC PHENOMENA

Apart from the three main questions of the day discussed in the congress, an interesting paper was read by Dr. André Léri, *agrégé* professor at the Faculté de médecine de Paris, tending to show that contrary to the general opinion, pain is not an intellectual or even a cerebral phenomenon. Pain exists in the absence of brain. Léri had an opportunity to examine repeatedly an anencephalus which lived three days. The child cried and struggled when it was pinched at the level of the limbs or of the face. It showed evident signs of pain. At the autopsy not only was no brain discovered, but there was not even a trace of protuberance. There was indeed a trigeminal nerve and Gasserian ganglion on each side, but from the ganglion the efferent nerve lost itself in the fibrous tissue on the border of the temporal bone. The trigeminal is considered the only sensory nerve of the face and the infant felt it when its face was irritated. Thus painful sensation seems to exist not only independent of the brain but even independent of any nerve center.

Death of Prof. G. Julliard

Dr. G. Julliard, former professor of clinical medicine at the Faculté de médecine of Geneva and formerly chief surgeon of the cantonal hospital of that city, has just died. He studied medicine in Paris from 1857 to 1865. Dr. Julliard took an important part in the organization of medical instruction which was inaugurated at the Université de Genève in 1876. He had the honor of installing open-air pavilions at the cantonal hospital which before the antiseptic period contributed to combat effectively the hospital gangrene which raged so cruelly in Geneva during the quartering of the French troops in 1871. He also carried on an earnest propaganda for the substitution of ether for chloroform in surgical anesthesia. Dr. Julliard was foreign correspondent of the Académie de médecine de Paris.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 25, 1911

Personal

Prof. A. Seligmüller, the neurologist of Halle, celebrated the semicentennial of his doctorate August 22.

The renowned Jena obstetrician and gynecologist, Prof. Bernhard Sigmund Schultze, celebrated the sixtieth year jubilee of his doctorate August 27.

The noted Bern surgeon, Professor Kocher, celebrated his seventieth birthday on August 25.

An Address of the Kaiser

On the occasion of his stay in Cassel, our Kaiser dedicated a new banner (in place of the one given by his father) at the gymnasium of that place, at which, as is well known, he received his schooling. In connection with it he delivered an address to the pupils of the highest classes, in which among other things he emphasized the importance of liberal studies. In the study of antiquity the emphasis should be placed not on the peculiarities of political life, which were entirely different from those of the present day, but on the harmony in art and philosophy which was peculiar to the Grecian people above all others and is especially lacking in our day; at the same time, study of the history of the fatherland should not be neglected. These statements are especially remarkable for the reason that they might suggest a retraction on the part of the Kaiser of the excessive estimate of physical science, which he gave in a speech a few years ago. At that time his words formed an introduction to the preference for scientific schools in Germany and further for the admission of graduates of these schools to the study of medicine and law. Probably now greater weight will be laid henceforth on the classical studies again and consequently the danger of the regular classic course becoming more and more neglected will be averted. In addition the Kaiser also in this address again emphasized the injuriousness of the misuse of alcohol, especially for college students. On this occasion he praised the custom of excluding the use of alcohol adopted by the college men in America, of whose ability we have often had occasion to be convinced, and he advised his audience to strengthen the body through sport, rather than to establish a record in the consumption of alcoholic drinks.

Shorter Hours in the Prussian Higher Institutions of Learning

The so-called short period of forty minutes already adopted in most of the Berlin higher institutions of learning is to be extended to all the similar institutions of Prussia according to a decision of the Prussian minister of education. In the edict the minister makes it the duty of the directors to exercise careful supervision, to see that no increase of work at home results from the shortening of the time of instruction in school, so that especially the free afternoons shall be devoted to physical recreation in the open air and to spontaneous intellectual work, if necessary by calling on the parents for aid. At the same time, the minister cautions that the pupil must not be under any compulsion to take part in the optional courses in the school.

Aid Bureau for Persons Discharged from Insane Asylums

Persons who have been discharged from an insane asylum and have now again to take up the battle of life as well as mentally abnormal people in general but who are not ill enough to need institutional care, have always caused great and often insurmountable difficulty to public charity. Already ten years ago the idea was advanced in Berlin of providing a special kind of care for this class of persons needing aid. Now a bureau for the care of discharged lunatics is being established on the basis of a program put forward by Privy Counsellor Moeli, chief of the Herzberg Asylum. The fundamental idea of this arrangement is that these persons need aid directed by a psychiatrist. There are four functions for the bureau: 1. Immediately after discharge, of which as far as possible the bureau must be previously notified, a suitable lodging must be provided, as far as possible in a family. Subsequently this lodging is to be permanently supervised. 2. Employment fitting the individual capacity and conditions of the patient is to be provided, and the bureau is to secure an appropriate place to work, in which the one receiving care shall be employed, at first necessarily at small wages and gradually providing for an improvement of the conditions of labor. 3. Also the conduct of the patient must be constantly superintended, and in the case of those previously addicted to alcohol, they are to be induced to join temperance societies, and injurious associations are to be prevented if necessary by removal to another environment. 4. To aid the ward in all business relations of daily life.

It has been determined to adopt a mixed form of care, similar to that which has already been adopted in the infant welfare stations. The station will be placed under the supervision of a salaried physician. The business management is to be looked after by a municipal official. The soul of the special care is a salaried nurse experienced in the treatment of those mentally afflicted. She will be aided by a number of unsalaried assistants.

Protest of Physicians at Königsberg Against Pollution of Water

In Königsberg the River Pregel which flows through the city has for many years given off a quite intolerable odor. This nuisance, of which much complaint has been made in the course of time, has not been removed, in spite of all the efforts of the city authorities. The odor has become even stronger in the last year. The water of the Pregel is of a dark color and with a west wind exhales a pestilential smell which extends far into the suburbs. Last Saturday the local physicians determined to present a remonstrance to all of the present authorities, declaring that it is held to be an elementary duty of all of the officials who have to do with the matter to leave nothing untried in order to remove this disgusting nuisance from the city. The president of the Königsberg medical association (*Aerzteverein*) was commissioned to forward a copy of this protest to the governor of the province, to the national legislature, the mayor and the city council.

The Movement of the Population in Germany in 1909

According to the official statistics just published, there were in the German empire in 1909, 494,127 marriages; this is 6,493 or 1.3 per cent. less than the previous year. Also the number of births has diminished. There were in 1909, 2,038,357 children born; in 1908, 2,076,660, so that the number of births has been reduced by 1.8 per cent. The number of deaths has fallen still more, as in 1909 there were 1,154,296 deaths as against 1,197,098 in the previous year, a reduction of 3.6 per cent. In spite of the considerable increase in the German population, the number of deaths is the smallest that has been recorded since the foundation of the empire. For every 1,000 inhabitants there were in 1909 15.48 marriages, 31.91 births and 18.07 deaths; in the previous year these figures were 15.88, 32.97 and 19.01. The natural increase of the German people or the excess of births over deaths, was 884,061, or 13.84 per thousand of the population. The age of those marrying was, among the men, under 25 in 30 per cent. of the cases and in 71.5 per cent. under 30 years, and among the women, in 58.2 per cent. under 25 years. Of the 2,038,357 births in the year 1909, 97.05 per cent. of the children were born living and 2.95 per cent. were still-born; 12.8 per 1,000 of the births were plural births; of these 25,893 were twins, 261 triplets and three quadruplets. In all 52,581 children were born in plural births. Of the 1,154,296 deaths in the year 1909, 60,079 were born dead and 335,436 were children under one year. For every 100 born there were seventeen deaths in the first year of life. This indicates a reduction of the infant mortality over that of the previous year, but it is still a very considerable figure in comparison with other civilized countries.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

PROGRESS OF PHARMACOPEIA REVISION

I. THE PHYSICIAN AND THE PHARMACOPEIA; GENERAL PRINCIPLES

The Executive Committee of Revision, after fifteen months of labor, has made public its first report[1]; this deals with a subject of decided interest to physicians, the scope of the Pharmacopeia.

In order to discuss the Pharmacopeia from any standpoint it is essential to keep clearly in mind what the Pharmacopeia is or purports to be. It is sometimes stated that the Pharmacopeia is now a "law book," but it is this only incidentally. As pointed out in recent court decisions, it was simply adopted as a legal standard for the articles which its owners care to include in it; there is therefore no reason for the latter to consider this aspect of the question further than it suits their purposes to do so.

The Pharmacopeia of the United States originated by physicians is now the exclusive property of the medical and phar-

1. American Druggist, Aug. 28, 1911, p. 23.

maceutical professions—professions which are assumed to be working together for the good of the sick and the protection of the well, and supposed to discountenance any practices incompatible with these aims, and to warn their clientele against practices or drugs which will be either harmful or useless. The specious argument that the public "calls" for worthless things and that it is legitimate to supply this want was long ago repudiated by the medical profession, if indeed it was ever recognized, as it also is by most pharmacists.

These several considerations, if adopted, would naturally narrow the scope of the Pharmacopeia and find their logical expression in the "guiding principle" adopted by the present Committee of Revision, namely, that admission to, or retention in the Pharmacopeia should be determined by "therapeutic usefulness or pharmaceutical necessity."

It is by this guiding principle that the work of the Committee of Revision, as indicated by the present report on the scope, is to be judged. This brings us at once to the question as to how the committee has acquitted itself from the standpoint of the medical profession. We presume physicians have the right to ask this question, since the book was originated by physicians and because more than 60 per cent. of the organizations entitled to take part in the revision are medical organizations and by a further fact that slightly more than 50 per cent. of the organizations actually represented at the last Pharmacopeial Convention were medical organizations.

No committee of revision in recent years has had such excellent opportunities to learn the wishes of physicians as regards the scope of the Pharmacopeia as has the present one. The subject was under active discussion at medical meetings for several years before the Committee of Revision was selected. Various medical societies, including the American Medical Association and most of its sections, had special committees on the subject. Some of the societies arranged for a system of balloting by all their members. The Committee on the U. S. Pharmacopeia of the Association secured a vote on all the articles in the United States Pharmacopeia from the teachers of materia medica and therapeutics in the medical colleges of the United States. This material was carefully tabulated and printed and was freely accessible to the Committee of Revision. It may be said that there was an almost complete unanimity of opinion of the large number of physicians taking part in this work as to what the Pharmacopeia should be: it was that it should be a book which should reflect the best drug therapeutics of the United States and further that it should contain only remedies of recognized and established value so that the recognition of a drug by the Pharmacopeia would be, as it is generally taken to be, an assurance that the best medical thought at present holds it to be of established value. No other conclusion could possibly be drawn from this large amount of evidence; those who held any other view of the scope of the Pharmacopeia were in an extremely small minority.

Viewed from this standpoint the present report of the Committee of Revision is disappointing.

II. PROPOSED ADDITIONS AND DELETIONS

The proposed admissions[2] to the U. S. P. IX may be considered first, for it is by admissions that most physicians will judge the ability of the Pharmacopeia to adapt itself to the needs of modern medicine. To the extent that a pharmacopeia, for any reason whatever, is unable to include drugs which are in constant use by large numbers of well-informed practitioners, to that extent it can not expect to receive the cordial support of the profession. It is proposed to admit thirty-nine new drugs in the next revision. While it would be of interest to know by what process of inquiry the revision committee was led to think that there is a widespread, intelli-

2. The proposed omissions and additions are:

ARTICLES TO BE DROPPED

Acetum Opii
Acidum Camphoricum
Acidum Sulphurosum
Alumini Sulphas
Argenti Nitras Mitigatus
Bismuthi Citras
Bismuthi et Ammonii Citras
Calamus
Cassia Fistula
Catapiasma Kaolini
Ceratum Camphoræ
Ceratum Plumbi Subacetatis
Cerii Oxalas
Chimaphila
Chirata
Cinnaldehydum
Colchici Cormus
Collodium Stypticum
Confectio Sennæ
Conium
Cusso
Cypripedium
Emplastrum Hydrargyri
Emplastrum Opii
Emplastrum Saponis
Emulsum Chloroformi
Emulsum Olei Morrhuæ cum Hypophosphitibus
Extractum Colchici Cormi
Extractum Digitalis
Extractum Hæmatoxyli
Extractum Krameriæ
Extractum Leptandræ
Extractum Malti
Extractum Scopoliæ
Extractum Sumbul
Ferri Citras
Ferri et Ammonii Sulphas
Ferri et Ammonii Tartras
Ferri et Potassi Tartras
Ferri et Strychninæ Citras
Ferri Hydroxidum
Ferri Hypophosphis
Ficus
Fluidextractum Calami
Fluidextractum Calumbæ
Fluidextractum Chimaphilæ
Fluidextractum Chiratæ
Fluidextractum Conii
Fluidextractum Cubebæ
Fluidextractum Cypripedii
Fluidextractum Digitalis
Fluidextractum Euonymi
Fluidextractum Eupatorii
Fluidextractum Geranii
Fluidextractum Lappæ
Fluidextractum Leptandræ
Fluidextractum Lupulini
Fluidextractum Matico
Fluidextractum Meserei
Fluidextractum Pareiræ
Fluidextractum Phytolaccæ
Fluidextractum Quassiæ
Fluidextractum Quercus
Fluidextractum Quillajæ
Fluidextractum Rosæ
Fluidextractum Rubi
Fluidextractum Sabinæ
Fluidextractum Sanguinariæ
Fluidextractum Scopoliæ
Fluidextractum Scutellariæ
Fluidextractum Stillingiæ
Fluidextractum Stramonii
Fluidextractum Veratri
Geranium
Glyceritum Ferri, Quininæ et Strychninæ Phosphatum
Hamamelidis Cortex
Hedeoma
Hyoscyaminæ Sulphas
Infusum Pruni Virginianæ
Iodolum
Lappa
Lithii Benzoas
Lithii Salicylas
Mangani Sulphas
Mastiche
Matico
Mistura Ferri Composita
Mistura Rhei et Sodæ
Mucilago Ulmi
Naphthalenum
Oleatum Quininæ
Oleorsina Lupulini
Oleum Adipis
Oleum Aethereum
Oleum Chenopodii
Oleum Copaibæ
Oleum Erigerontis
Oleum Sabinæ
Pilulæ Aloes et Mastiches
Pilulæ Aloes et Myrrhæ
Pilulæ Laxativæ Compositæ
Pilulæ Opii
Pilulæ Podophylli, Belladonnæ et Capsici
Piperina
Plumbi Iodidum
Plumbi Nitras
Potassii Sulphas
Prunum
Pulvis Morphinæ Compositus
Quercus
Quillaja
Rubus
Sabina
Santonica
Scammonium
Scoparius
Scutellaria
Sodii Bisulphis
Sodii Nitras
Sodii Pyrophosphas
Spiritus Aetheris Compositus
Sulphuris Iodidum
Syrupus Ferri, Quininæ et Strychninæ Phosphatum
Syrupus Hypophosphitum Compositus
Syrupus Krameriæ
Syrupus Rubi
Tamarindus
Tinctura Aloes et Myrrhæ
Tinctura Cardamomi
Tinctura Galiæ
Tinctura Ipecacuanhæ et Opii
Tincturæ Herbarum Recentium
Trochisci Gambir
Trochisci Glycyrrhizæ et Opii
Trochisci Krameriæ
Trochisci Santonini
Unguentum Galiæ
Unguentum Hydrargyri Oxidi Rubri
Unguentum Potassii Iodidi
Unguentum Veratrinæ
Unguentum Zinci Stearatis
Viburnum Opulus
Vinum Album
Vinum Cocæ
Vinum Colchici Seminis
Vinum Ergotæ
Vinum Ferri
Vinum Ferri Amarum
Vinum Ipecacuanhæ
Vinum Opii
Vinum Rubrum
Zea
Zinci Bromidum
Zinci Iodidum

NEW ARTICLES TO BE ADMITTED

Ammonium Bifluorid
Antitetanic Serum
Apiol
Aspidospermin
Bismuth Beta-Naphtol
Buchu (Long)
Caffein Sodio-Benzoate
Calcium Chlorid (Hydrated Crystals)
Calcium Glycerophosphate
Calcium Lactate
Carbonic Acid (Compressed)
Condurango
Creosote Carbonate
Crocus
Diacetyl-Morphin
Diacetyl-Morphin Hydrochlorid
Diastase
Emplastrum Cantharidis
Erythrol Tetranitrate
Fluorescein
Mercury Salicylate
Milk of Magnesia
Milk of Bismuth
Oxygen (Compressed)
Picric Acid
Phenolphthalein
Pine Needle Oil
Potassa Sulphurata
Quinin and Urea Hydrochlorid
Saccharin Sodium Salt
Sodium Cacodylate
Sodium Glycerophosphate
Sodium Perborate
Solution of Hydrogen Dioxid (30 per cent.)
Theobromin Sodio-Salicylate
Trioxymethylene
Uranium Nitrate
Vaccine Virus

gent demand for some of the preparations it is proposed to admit (aspidospermin, apiol, calcium glycerophosphate, for example) the failure to admit or make any reference to a number of specific recommendations of large and important bodies of physicians must cause surprise.

As has been pointed out, several sections of the American Medical Association, after long and careful study, made recommendations as to a number of admissions; surely no one would question that the members of these sections are well qualified to state what is needed by the practitioners of this country.

These recommendations have thus far received favorable consideration to but a very limited extent. With the exception of the report of the Section on Practice of Medicine (five of the six recommendations of which were accepted) there is nothing to indicate that these valuable reports were considered. Thus none of the recommendations of the Section on Obstetrics and Gynecology was adopted, but one of those of the Section on Ophthalmology, and four of those of the Section on Stomatology. It is true that some of the recommendations were not very definite, but they represent pharmaceutical problems encountered by physicians, problems which it would be natural to expect the Committee of Revision to solve. No doubt the latter could solve them if it was given the necessary means and assistance to carry on research work, especially if the former Committee of Revision had been at work on them in the long interval since the last revision.

Thus while the Committee of Revision should not be blamed, especially since most of the members serve with practically no direct remuneration, yet the important fact remains that when physicians meet pharmaceutical problems they are, apparently, unable to secure help from the logical source, namely, the Pharmacopeia. It is to be hoped that some of these problems are not mentioned in the present report because they are receiving further consideration.

It is proposed to delete 154 articles. With the thirty-nine additions this will still leave approximately 850 articles in the U. S. Pharmacopeia, a number which seems out of all proportion to the needs of modern medicine, especially when it is noted that about 20 per cent. of these are peculiar to the Pharmacopeia of the United States.

It is not likely that well informed physicians will miss many of the 154 articles it is proposed to delete, and it is a question if there is not an almost equal number retained which might have been deleted with as much or more justification; this was the opinion of a majority of the teachers of materia medica and therapeutics of the medical colleges who voted on this subject (and their collective wisdom is perhaps equal to the wisdom of the fifteen members of the Executive Committee of Revision with its one practicing physician).

As a matter of fact it is proposed to retain a number of peculiarly objectionable drugs. These include several plant drugs long since recognized as devoid of value or as having but a very secondary value, the main use of which is to deceive the people in one way or another, either as ingredients of "patent medicines" or of equally undesirable "ethical proprietaries."

The list includes such little used (by physicians) drugs as cinchonin, eupatorium, matricaria, rhus glabra, sabal, salvia, etc. Some of these are undoubtedly much "called for" by the laity, i. e., by the "patent-medicine" people; others are prominent in the names of certain "ethical proprietary" mixtures, and serve to overshadow the really important constituents; there is probably a large "sale" for them—but these are not tests of "therapeutic value." The vigor with which some of these drugs are repudiated by the medical profession is shown by the fact that they were recommended for deletion by the Section on Practice of Medicine, and by the majority of the teachers of materia medica and therapeutics and by certain medical societies; moreover they are comparatively little used on prescription.

It is also interesting to note that the Section on Obstetrics and Gynecology, the members of which are preeminently the best qualified to judge, voted to delete gossypii cortex and glyceritum hydrastis, which the Committee of Revision propose to retain, and that they voted to retain cerii oxalas, which it is proposed to delete; that the Section on Dermatology stated that the only plasters of value to dermatologists are the emplastrum plumbi and emplastrum hydrargyri; the revision committee proposes to delete the latter and to retain some used chiefly by the laity.

Previous revision committees have excused the shortcomings of the Pharmacopeia on the ground that so few physicians, and those not always representative, took an interest in the work; the present committee cannot make this excuse, for thoroughly representative bodies of active practitioners have supplied much more information than the committee seems to have been able to assimilate. Interests other than those of modern progressive medicine seem still to preponderate in pharmacopeial management.

While the report is disappointing in many ways, yet the encouraging feature is that the tide seems to have turned, and that the degeneration which Dr. Jacobi said was noticeable in recent revisions seems to have been checked, for a Pharmacopeia constructed on the lines which are foreshadowed by the first report of the Executive Committee of Revision is certainly a decided improvement over its immediate predecessor, and should encourage physicians to renewed activity and interest.

THE CHARGE AGAINST DR. WILEY

Extracts from the Testimony Given Before the Congressional Committee

(Continued from page 915)

THE INDIANA CASE

[A brief statement of the facts regarding what is known as the Indiana case appears editorially in this issue. It is there shown how the power of the federal government was used to assist Curtice Bros. and Williams Bros., in their attempt to have the pure food law of the state of Indiana declared unconstitutional. The matter that follows is taken from part of the testimony given before the Congressional Committee regarding the case. We first quote that part of the testimony of President Remsen, chairman of the referee board, that refers to the Indiana case.]

[*President Remsen's Testimony*]

Mr. Floyd. I want to ask you some other questions in connection with the benzoate of soda inquiry, and will ask that if you cannot give the information about the matter now, you will supply it to us later. I will ask you to state, if you know, whether or not Curtice Bros., of New York, and Williams Bros., of Detroit, Mich., are among the leading manufacturers of benzoate of soda in the United States?

Dr. Remsen. I do not know that I have ever heard that they were manufacturers of benzoate of soda.

Mr. French. You do not mean manufacturers of benzoate of soda?

Mr. Floyd. No, sir; I mean of the products in which benzoate of soda is used.

Dr. Remsen. All that I know about it is from signs that I have seen along the railroads.

Mr. Floyd. They use it, do they not? Are they not the principal users?

Dr. Remsen. I do not know.

Mr. Floyd. But you know it is used in the commodities you saw advertised by them?

Dr. Remsen. Yes, sir.

Mr. Floyd. They were products in which benzoate of soda is used, were they not?

Dr. Remsen. Yes, sir; in some of them it is used.

Mr. Floyd. I will ask you to state whether or not you were called on to give testimony against the State of Indiana in a suit against that state brought by Curtice Bros., of New York, and Williams Bros., of Detroit, Mich., in which case the pure-food law of the State of Indiana was involved, or, rather, a violation of it was involved.

Dr. Remsen. I would like to raise one question. I am not sure that the products of Williams Bros. and Curtice Bros. were involved, but there is a suit still pending, and I was called to give testimony in that suit.

Mr. Floyd. I will ask if you were called on to give testimony in a suit, in the State of Indiana, in which the enforcement of the pure-food law of the State of Indiana was involved?

Dr. Remsen. I was.

Mr. Floyd. Did you appear as a witness for or against the State in that suit?

Dr. Remsen. So far as my state of mind was concerned, I appeared for neither side. I simply wanted to state the facts as I knew them.

Mr. Floyd. At whose instance were you called?

Dr. Remsen. The first person who called on me was someone representing, I think, Curtice Bros. I told him I would not appear in the suit; that I did not care to get involved in it. He said that our report was involved in the suit; that our work was involved, and that it was due to the work which we had done to make certain statements, or to answer certain questions in regard to it. I then saw the Secretary of Agriculture, and asked whether he thought it was proper for me to give such testimony. He said that he thought it proper, and advised me to give it.

Mr. Floyd. Was that in relation to benzoate of soda or saccharin?

Dr. Remsen. Benzoate of soda.

Mr. Floyd. And your testimony was in relation to benzoate of soda?

Dr. Remsen. Yes, sir.

Mr. Floyd. And before going to give your testimony, you consulted with the Secretary of Agriculture, and he advised you that it was entirely proper for you to go and give the testimony?

Dr. Remsen. Yes, sir; because the report which we had given to the Secretary of Agriculture was at stake. We were told that they were going to attack this report, and that that would be in one sense the point of attack. They put it to us this way: That those who were responsible for the report ought at least to make some statement in regard to the character of it; that they could not put our report in as evidence, I believe, and they wanted testimony concerning the report, because the report itself could not be put in the record. That is all I know about it.

THE ATTITUDE OF THE SECRETARY OF AGRICULTURE

[The attitude of the Secretary of Agriculture in this case was made evident. From his standpoint, the government was pro-benzoate and, as such, must champion the cause of those manufacturers who use this chemical preservative.]

The Chairman. When you referred the matter to the Secretary of Agriculture for his advice as to whether you should testify or not, if he had advised you not to testify would you have given your testimony?

Dr. Remsen. Well, of course, that is a hypothetical question. I don't think we should.

The Chairman. You don't think you should?

Dr. Remsen. No. We were anxious not to appear in the suit at all.

The Chairman. When Dr. Chittenden asked your advice and you advised him to go, if you had advised him not to go do you believe he would have gone?

Dr. Remsen. That would depend on the pressure brought to bear on him from better and higher sources. Possibly the Secretary of Agriculture might have advised him to go even if I had advised him not to go. I think he would have followed the advice of the Secretary.

The Chairman. You spoke about having an aversion to giving testimony, but that the aversion was overcome. Now I want to know what force it was that led you to overcome that aversion?

Dr. Remsen. The whole force was a feeling on our part that perhaps we could aid those who were engaged in trying the suit to get at the real facts in the case.

The Chairman. Did you consider the question as to whether it would be proper, being a member of the referee board, on that account, for you to give testimony?

. . . . . .

Dr. Remsen. The way it lies in my mind now is the way it lay in my mind at that time, I am sure. I could not see any objection to giving a deposition in regard to the character of our work and the general relation we held toward the work which had been done. We had no feeling, as I say, no desire whatever to support anyone or to undermine anyone.

The Chairman. But you understood, however, that the defendant in this case was the State of Indiana?

Dr. Remsen. Yes; I did get that into my head after awhile. It took some time to do so, I must say.

The Chairman. And that it was the contention of the authorities of the State of Indiana and of the state chemist that the use of benzoate acid as a preservative for food was harmful to the public health?

Dr. Remsen. Yes; I understood that.

The Chairman. And you understood also that the judicial department of the State of Indiana was attempting to exclude from sale in our state any foods that used benzoate of soda as a preservative?

Dr. Remsen. I do not know anything about the machinery and did not know exactly where the matter stood; but I knew the suit had been brought. Exactly how it was brought or why it was brought I did not know then and do not know now.

The Chairman. And you knew, too, that if you gave testimony, your testimony would be favorable to the use of benzoate of soda as a preservative of foods?

Dr. Remsen. I suppose I knew that, although that did not enter into my thoughts. I am perfectly sincere in saying that all I wanted to do was to help these gentlemen as far as I could in arriving at the facts.

The Chairman. And the result would naturally follow, that whatever prestige you had gained by the fact of being a member of the referee board would naturally be against the contention of the State of Indiana in their enforcement of what they considered to be the pure-food laws of our state.

Dr. Remsen. I suppose that passed through my mind, although I did not spend any time worrying about it, because that was not what I was asked to think about.

The Chairman. Now, then, did that particular phase of it bring to your mind this particular question of propriety that you had in mind which caused you to refer this matter to the Secretary of Agriculture for his advice?

Dr. Remsen. I don't think that phase of it did; no. It was a general question as to whether the members of the referee board who had been called on by the United States Government—I think I can say that—to pass on certain scientific questions and had handed a report to the Secretary of Agriculture—it did occur to me that there might be some impropriety in a member of that board appearing in any capacity as a witness if he could help it. We cannot always help it.

The Chairman. And the Secretary advised you that there would be no impropriety in so appearing?

Dr. Remsen. Yes, sir.

The Chairman. And did he say it was your duty to do it?

Dr. Remsen. I don't think he put it as strong as that; but I got about that impression from what he said. The point was, as I remember it in our conversation, he said: "Gentlemen, you have made a report which you have signed; that is your statement. Now, that is called in question and if you are asked to answer questions in regard to it, it seems to me entirely proper that you should answer those questions." That was the way the matter was presented to me and it seems now a reasonable way—

Mr. Higgins. Were you under summons from the court?

Dr. Remsen. No; I never was.

THE ATTEMPT TO DEPRIVE INDIANA OF DR. WILEY'S TESTIMONY

[Knowing that the Secretary of Agriculture was wedded to the pro-benzoate side of the question, Solicitor McCabe tried his best to prevent Dr. Wiley, whose views against the use of sodium benzoate are well known, from going to Indianapolis to testify.]

[*Solicitor McCabe's Testimony*]

Mr. Floyd. Now, I will ask you to state if you know anything about the case that was pending in the State of Indiana between Williams Bros., of Michigan, and Curtice Bros., of Rochester, N. Y., against the State of Indiana, wherein the pure-food law of Indiana was involved?

Mr. McCabe. Yes, sir.

Mr. Floyd. Now, I will ask you to state if any of the employees of the Agricultural Department attended that trial and gave testimony on either side.

Mr. McCabe. I do not know as to whether or not they attended the trial—that is, as to whether or not they went out before the master. But I know that employees of the Department of Agriculture gave testimony in the case.

Mr. Floyd. You do not know whether they attended or not, though?

Mr. McCabe. No, sir.

Mr. Floyd. And you do not know, if they did attend, how their expenses were paid?

Mr. McCabe. No, sir; I do not.

The Chairman. Were you requested to give an official opinion by the authorities of the State of Indiana as to whether Dr. Wiley might be permitted to give his testimony in that case?

Mr. McCabe. No, I don't think so, Mr. Moss. I was requested either by Dr. Wiley or Dr. Bigelow to give an opinion as to whether or not their testimony could be compelled—their testimony as experts could be compelled.

The Chairman. What advice did you give Dr. Wiley on that?

Mr. McCabe. I gave him the advice that he could not be compelled to testify as an expert in that case.

The Chairman. What effect did that have on securing or depriving the State of Indiana of Dr. Wiley's testimony?

Mr. McCabe. None.

The Chairman. Dr. Wiley gave testimony in that case, did he not?

Mr. McCabe. Yes, sir.

The Chairman. Will you state to the committee how it came about that Dr. Wiley testified?

Mr. McCabe. I was absent from Washington at the time. I was on my leave. My understanding of the matter is that Dr. Wiley refused to testify on the strength of my opinion and that application was made by the attorney general of the State of Indiana to Mr. Justice Barnard, of the local Supreme Court of the District, and that Justice Barnard signed an order requiring Dr. Wiley and the other men to testify on the facts.

The Chairman. The request, then, came to the Department of Agriculture from the attorney general of the State of Indiana that Dr. Wiley be permitted to testify, did it not?

Mr. McCabe. Yes.

The Chairman. And the effect of your decision was that he should not testify.

Mr. McCabe. No, sir.

The Chairman. What was the effect of your decision?

Mr. McCabe. The effect of my decision was that he could not be compelled to testify in that case as a witness. I will say, frankly, that I did not want Dr. Wiley to testify in that case.

The Chairman. Did you advise him not to testify?

Mr. McCabe. No, sir.

The Chairman. Did the Secretary of Agriculture advise him not to testify?

Mr. McCabe. Not to my knowledge.

The Chairman. But you did not want him to testify?

Mr. McCabe. No, sir.

The Chairman. Why did you not want him to testify?

Mr. McCabe. Because I did not want him to testify as an officer of the department in opposition to the ruling that had been made by the Secretary and by the three secretaries.

The Chairman. It appeared in the testimony of Dr. Remsen yesterday that the Secretary of Agriculture advised him to give his testimony.

Mr. McCabe. Yes, sir.

The Chairman. At the time that you gave this advice to Dr. Wiley, were you aware of the fact that Dr. Remsen had been requested by the Secretary of Agriculture to give his testimony?

Mr. McCabe. Yes, sir; I was.

[Solicitor McCabe, in advising Dr. Wiley as to whether he could be made to appear before the court at Indianapolis, submitted the following opinion:]

"Under the circumstances, therefore, I have to advise you that it rests in your discretion as to whether or not you will appear and testify in answer to a subpena, since, as stated, failure to do so cannot be regarded as contempt of court, nor be punishable as such. The same is true, of course, of any other employee who may be subpenaed.

Very respectfully,
GEORGE P. MCCABE, *Solicitor.*

[Further questioning brought out the following:]

The Chairman. You stated that you were aware that the Secretary of Agriculture had requested Dr. Remsen to appear?

Mr. McCabe. Yes, sir.

The Chairman. Were you aware at that time that the request for Dr. Remsen to appear had come from Curtice Bros.?

Mr. McCabe. No, sir. I knew it came from their attorneys.

The Chairman. You knew that the request had come from Curtice Bros. to Dr. Remsen?

Mr. McCabe. From Curtice Bros.' and Williams Bros.' attorneys.

The Chairman. And that the Secretary of Agriculture, knowing the fact that Curtice Bros. had requested it, had requested him to give his testimony?

Mr. McCabe. No; I do not think that is a fair statement of it. What I said is this; that I knew the attorneys for Curtice Bros. and Williams Bros. in this proceeding had asked for this testimony.

The Chairman. And the Secretary of Agriculture had requested him to give the testimony.

Mr. McCabe. I knew the Secretary of Agriculture had requested Dr. Remsen to testify.

The Chairman. But you do not know whether the Secretary knew at that time that Curtice Bros. had requested him to give it?

Mr. McCabe. No; I don't know that Curtice Bros. had.

The Chairman. You knew also that the Attorney General had requested Dr. Wiley to give the testimony?

McCabe. The attorney general of the State of Indiana?

The Chairman. Yes.

McCabe. Yes, sir.

DR. BARNARD THROWS LIGHT ON THE PROCEEDINGS

[But by far the most interesting and enlightening testimony in this case was that given by the State Food and Drug Commissioner of Indiana, Dr. Harry E. Barnard, who is also chemist to the Indiana State Board of Health. So clear-cut and illuminating is Dr. Barnard's testimony that we reprint practically all of it, omitting only such parts as are repetitions.]

[*Dr. Barnard's Testimony*]

Mr. Moss: What is your present official position?

Dr. Barnard: Chemist to the State Board of Health of the State of Indiana and state food and drug commissioner.

Mr. Moss: What official positions have you held by appointment in the scientific world?

Dr. Barnard: For several years state chemist of New Hampshire; prior to that time, for a year, I was connected with the Navy Department here in Washington.

Mr. Moss: What were your duties in the Navy Department?

Dr. Barnard: Assistant chemist in the government smokeless-powder factory at Indianhead.

Mr. Moss: Do the statutes of Indiana contain what is generally known as a pure-food law?

Dr. Barnard: They do.

Mr. Moss: State briefly the provisions regulating the use of preservatives in canned food.

Dr. Barnard: Section 2 of provision 7 provides:

If it [a food] contains any added antiseptic or preservative substances except common table salt, saltpeter, cane sugar, vinegar, spices, or, in smoked food, the natural products of the smoking process, or other harmless preservatives whose use is authorized by the State Board of Health, it shall be deemed adulterated.

Mr. Moss: Do you recall the date when that was placed on the statute book?

Dr. Barnard: March 4, 1907.

Mr. Moss: Has there been, so far as you know, any attempt made in the Indiana Legislature to repeal this pure-food law?

Dr. Barnard: There never has been any attempt made to change it; no.

Mr. Moss: Has this statute been attacked by the press, or has it been approved by the press generally of the state?

Dr. Barnard: The pure-food law and all of its provisions have always been approved by the press of Indiana.

Mr. Moss: How many canning factories are there in the state of Indiana in active operation at the present time?

Dr. Barnard: About 120 canning factories, and in addition I suppose there are about fifty other factories which manufacture food products from raw materials, such as apple butter and products of that kind.

Mr. Moss: Did any of these factories conduct an interstate business?

Dr. Barnard: Nearly all of them do an interstate business.

Mr. Moss: Are any of those large concerns?

Dr. Barnard: Several are among the largest in the country.

. . . . . .

Mr. Moss: Are goods canned in the State of Indiana conformable to the provisions of the state law as to preservatives permitted to be sold in other states of the Union?

Dr. Barnard: So far as I know, they are.

Mr. Moss: So far as you know, then, goods that pass the law of the State of Indiana as to purity will also pass the laws of any other state in the Union?

Dr. Barnard: So far as I know; yes.

Mr. Moss: What has been the effect of the state law in regard to pure food on the canning industry of the state, so far as stimulating or depressing the growth of that line of business?

Dr. Barnard: I believe the passing of our pure-food law has materially advanced the status of our canneries. They are in a much better position before the country to-day than they ever were before.

Mr. Moss: Is the output of those factories greater now than it was at the time of the passage of this law?

Dr. Barnard: Yes.

Mr. Moss: State the attitude of the packers in Indiana toward the pure-food law.

Dr. Barnard: All the canners of the state are in hearty sympathy with its provisions.

Mr. Moss: Do you state this fact within your own knowledge, having obtained it from conversations with leading packers of the state?

Dr. Barnard: Yes; I know that to be a fact.

Mr. Moss: Has any citizen of the State of Indiana filed suit to have this statute of the state declared invalid?

Dr. Barnard: No.

Mr. Moss: If such suit were to be filed, would the state or federal courts have jurisdiction?

Dr. Barnard: The state courts would have the jurisdiction.

Mr. Moss: As a matter of fact, has any suit been filed in any court to have the provisions of this law declared invalid?

Dr. Barnard: Yes. Such a suit has been filed.

Mr. Moss: By whom was it filed?

Dr. Barnard: Suit was filed on the 19th day of December, 1908, by two companies, the Williams Bros. Co., of Detroit, Mich., and the Curtice Bros. Co., of New York.

Mr. Moss: In what court was this suit filed?

Dr. Barnard: In the Circuit Court of the United States for the State of Indiana.

Mr. Moss: How came the Federal courts to have jurisdiction over a suit affecting a state law ?

Dr. Barnard: I think it was because the complainants were foreign corporations.

Mr. Moss: Are either Curtice Bros. or Williams Bros., who appear as complainants in the case, citizens of Indiana?

Dr. Barnard: No; they are not.

Mr. Moss: Does either of the complainants own a canning factory in the State of Indiana?

Dr. Barnard: No; neither owns any.

Mr. Moss: Have you, as state chemist under the operations of our state law, seized goods which have been packed by either one of the complaining firms?

Dr. Barnard: Yes; we have collected a great many samples of goods manufactured by these two firms.

Mr. Moss: How were these goods labeled as to the use of preservatives?

Dr. Barnard: They were always labeled to indicate in certain classes of goods the existence of benzoate of soda to the extent of one-tenth or one-twelfth of 1 per cent.

Mr. Moss: Did you analyze any of these seizures?

Dr. Barnard: Yes; many samples.

Mr. Moss: Upon analysis in the state laboratory what proportion of benzoate of soda was found in those samples?

Dr. Barnard: Various quantities, but in almost every case from two to three times the amount declared on the label.

Mr. Moss: Then, according to your understanding of the regulations promulgated by the three secretaries as to goods which could be sent in interstate commerce, providing they were correctly labeled as to the proportion of benzoate, the goods that you analyzed would have violated those provisions?

Dr. Barnard: I take it they were all illegal.

Mr. Moss: If these firms were to pack their goods, using only such preservatives as are prescribed by our state law, would they have free sale in our state?

Dr. Barnard: Certainly.

. . . . . .

Mr. Moss: In what form was the suit brought against the state by Curtice Bros. and Williams Bros.?

Dr. Barnard: The plaintiffs came before the judge of the United States court of Indianapolis, asking for an injunction restraining the state food commissioner and the individual members of the State Board of Health from enforcing the pure-food law, and alleging that the pure-food law of the State of Indiana was unconstitutional and void for many reasons.

Mr. Moss: The legal grounds we will place in the record. What I want to develop is that it was for a temporary injunction restraining the state from enforcing the state law.

Dr. Barnard: Yes; that is rigat.

Mr. Moss: What was the ruling of Judge Anderson on this matter?

Dr. Barnard: He refused to grant the temporary injunction called for.

Mr. Moss: Did he also refuse to dismiss the petition?

Dr. Barnard: He refused to dismiss the petition of the state.

Mr. Moss: What legal procedure followed this ruling?

Dr. Barnard: Later the judge appointed a master in chancery to take testimony as to the facts involved in the petition of the complainants.

Mr. Moss: After this master was appointed did Williams Bros. and Curtice Bros. proceed to take depositions of various witnesses all over the United States?

Dr. Barnard: They did.

. . . . . .

Mr. Moss: In the taking of those depositions did Curtice Bros. and Williams Bros. take any testimony from any employees in the National Department of Agriculture?

Dr. Barnard: They did; yes, sir.

Mr. Moss: State to the best of your recollection how many employees of the Department of Agriculture gave testimony in this case for the firms of Curtice Bros. and Williams Bros.

Dr. Barnard: With the exception of two or three young men, subjects and clerks, any person who did any work in connection with the benzoate of soda investigation employed by the Department of Agriculture was examined. This included all members of the referee board, chemists, physicians, medical experts, clerks, stenographers, janitors—everyone who had anything to do with the case.

Mr. Moss: About how many in total?

Dr. Barnard: I cannot say exactly, but more than seventy-five.

Mr. Moss: Were Curtice Bros. and Williams Bros. compelled in any instance to apply to a court of justice to secure process to compel these employees, or any one of taem, to appear and testify in court?

Dr. Barnard: Not that I know of.

Mr. Moss: Did the State of Indiana secure testimony from any of the employees of the National Department of Agriculture?

Dr. Barnard: Yes.

Mr. Moss: You may state who they were that you desired particularly to testify.

Dr. Barnard: We wished to secure the testimony of Dr. Wiley, chief of the Bureau of Chemistry, and those of his assistants who helped him in his benzoate of soda investigation.

Mr. Moss: Did any of the employees appear voluntarily to give their testimony on the request of the State of Indiana?

Dr. Barnard: No; we found it impossible to get their testimony.

Mr. Moss: Have you any reason to believe that these employees were personally adverse to the giving of such testimony?

Dr. Barnard: No; I think not.

Mr. Moss: Did any of these employees appear finally and testify, or give their depositions?

Dr. Barnard: Yes; after we went to the Supreme Court of the District of Columbia to compel them to testify.

Mr. Moss: When the State of Indiana applied to the courts in the District of Columbia for compulsory process to compel the employees of the Department of Agriculture to appear and testify, did counsel representing the Department of Agriculture appear in opposition?

Dr. Barnard: Yes.

Mr. Moss: In actual test, then, did you find the Department of Agriculture cooperating with the State of Indiana in the enforcement of the pure-food law or operating in opposition to the enforcement of the state laws?

Dr. Barnard: We found the Department of Agriculture opposing the State of Indiana in every move which we made to defend the pure-food law of our state.

Mr. Moss: Now, as to the results of the suit, if the prayer of the Curtice Bros. and Williams Bros. had been granted, what would have been the effect upon the pure-food law of the State of Indiana?

Dr. Barnard: We would have had no pure-food law.

Mr. Moss: It involved the constitutionality, did it?

Dr. Barnard: It did.

Mr. Moss: And its validity?

Dr. Barnard: Yes.

Mr. Moss: And if this suit of theirs had been successful, or if it finally is successful, it will have the effect of striking from the statute books of the State of Indiana our pure-food law, will it?

Dr. Barnard: That is true.

Mr. Higgins: Well, only one section of it, doctor.

Dr. Barnard: No; they allege that the entire law should go out because when the sections to which they object are stricken out the rest of the law would have no force or effect, they claim.

Mr. Higgins: Of course, that is a legal proposition, and, as I understand it, it is still pending in court.

Dr. Barnard: Yes.

. . . . . .

Mr. Floyd (acting chairman): Are there any other questions by any other members of the committee?

Mr. Moss: I have one or two more questions. Practically the whole case of the plaintiff in so far as the testimony is submitted was made by the United States employees of the Department of Agriculture, was it not?

Dr. Barnard: Very largely so.

Mr. Moss: Now in the whole course of this suit was there any contention on the part of Curtice Bros. or Williams Bros. that food containing benzoate of soda was superior to that which did not contain it?

Dr. Barnard: I think that one witness of the Curtice Bros. Co. made that claim.

Mr. Moss: Their main claim, is, however, that the addition of benzoate of soda is not deleterious.

Dr. Barnard: Yes; that is the contention.

Mr. Higgins: That was the real issue in the case, was it not, doctor?

Dr. Barnard: Not at all.

Mr. Higgins: That is, as to the use of benzoate of soda as a preservative?

Dr. Barnard: It finally developed that that was the reason for the bringing of the case. The real issue in the case was as to whether or not we should continue to enforce the pure food law of the State of Indiana.

Mr. Higgins: But it revolved around the use of benzoate of soda?

Dr. Barnard: Yes.

Mr. Floyd: In other words, the friends of benzoate of soda were willing to destroy the whole law in order to get their product in?

Dr. Barnard: That was it, exactly.

Mr. Moss: The law involved was purely a state law?

Dr. Barnard: Yes.

Mr. Moss: One that was satisfactory to the canning industry of the State of Indiana?

Dr. Barnard: Yes.

Mr. Moss: One under which the canning industry has been growing and developing?

Dr. Barnard: Yes.

Mr. Moss: What is the reputation of the canned goods of Indiana in the markets of the world?

Dr. Barnard: We believe they are superior to all others.

Mr. Higgins: We will concede that they are the best.

Mr. Moss: And this suit to break down this state law was brought by citizens outside the state?

Dr. Barnard: Yes.

Mr. Moss: And having no business investment in the state?

Dr. Barnard: That is correct.

Mr. Moss: And having no material interest in the law except to get the sale of their products, containing benzoate of soda, within the State of Indiana?

Dr. Barnard: That is correct, I think.

[Equally important and interesting was the testimony given by Attorney General Bingham of Indiana. The difficulties he encountered when he attempted to get information and help from the federal government that would aid him in his defense of the pure food law of his state are here plainly described:]

[*Judge Bingham's Testimony*]

Mr. Moss: Please state your full name.

Mr. Bingham: James Bingham.

Mr. Moss: What official position in your state have you held?

Mr. Bingham: Recently, attorney general of Indiana.

Mr. Moss: During what years were you attorney general?

Mr. Bingham: From January 1, 1906, to January 1, 1911.

Mr. Moss: As attorney general of the State of Indiana, you are familiar with the suit brought by Curtice Bros. and Williams Bros. against the State of Indiana in the case involving the pure-food law?

Mr. Bingham: Yes, sir.

Mr. Moss: You will state concisely to the committee just what is involved from a legal standpoint in that suit.

Mr. Bingham: The constitutionality of our pure-food law in Indiana as applied to the use of benzoate of soda as a preservative.

Mr. Moss: Did it involve the interpretation of any federal law?

Mr. Bingham: No.

. . . . . .

Mr. Moss: What will be the effect on the operation of the pure-food law if the decision of Judge Anderson sustains the prayer of the complainant?

Mr. Bingham: It will practically destroy it.

Mr. Moss: It will practically destroy the law?

Mr. Bingham: Yes, sir.

Mr. Moss: You are of course familiar with the politics of our state. Do you know of any attempt having been made in the Legislature of the State of Indiana to repeal this law since it went upon the statute books?

Mr. Bingham: No. I have never known of any, although I have not been in touch with what has been going on in the committee rooms or anything of that kind, but, on the other hand, I think the policy has been to strengthen the law, not to destroy it.

Mr. Moss: So far as you are acquainted with the press of the state, has it supported or has it been opposed to this law in its present form?

Mr. Bingham: Oh, I think it has always given a cordial support to the law.

Mr. Moss: So far as you are acquainted with the public sentiment of the State of Indiana and the citizenship, is it favorable to or opposed to the pure-food law?

Mr. Bingham: I think it is decidedly favorable.

Mr. Moss: And so far as you have an acquaintance with the canning industries and other industries affected by the operations of the law, what is their attitude toward it in our state?

Mr. Bingham: I understand that it is most favorable and satisfactory. I have, of course, not had personal contact with anybody except a few of them, but I have talked with canners and preservative men, and also the dealers, and they are favorable to the law and exceedingly anxious that the question be decided, so they may know what—

Mr. Moss (interposing): During your term as attorney general, which was four years immediately following the passage of this law, were you called upon to defend any suit brought by any citizen of the State of Indiana to have this law declared invalid?

Mr. Bingham: None whatever.

Mr. Higgins: Your answer is "no"?

Mr. Bingham: None whatever. No suit of that kind.

Mr. Moss: You were called upon, however, to defend a suit brought by citizens without the state, were you not?

Mr. Bingham: Yes, sir.

Mr. Moss: Now, judge, what was the relief which Williams Bros. and Curtice Bros. asked of the federal court?

Mr. Bingham: They sought to have a restraining order issued.

Mr. Moss: Will you state to the committee how it came that the federal court had jurisdiction over this purely state law?

Mr. Bingham: Because it involved a constitutional question—that is, taking property without due process of law, and because of the diverse citizenship of the parties.

Mr. Moss: What answer did Judge Anderson make to this prayer for a temporary restraining order?

Mr. Bingham: He declined to grant the temporary restraining order in most positive terms.

. . . . . .

Mr. Moss: Will you state again about how much territory you traveled in order to take the various depositions asked for by the plaintiff?

Mr. Bingham: Well, we began taking depositions at Seal Harbor, Me., on Mount Desert Island, and we wound up in San Francisco, Cal.

Mr. Moss: Who paid the expenses of yourself and those who went along in the matter of the taking of these depositions?

Mr. Bingham: The State of Indiana.

Mr. Moss: And it amounted to a considerable amount?

Mr. Bingham: Yes, sir. I don't know exactly how much it did amount to, but I think perhaps the money we spent in going to San Francisco to take Dr. Taylor's deposition may be recovered on proper motion, for the reason that when they took the deposition I was out there and cross-examined him, and they decided after that to bring Dr. Taylor to Indianapolis and not use his deposition taken out West, and I suggested then to the court that at the proper time we would ask to have that cost taxed to the complainants; and I think that should be recovered. Otherwise the money was all paid.

Mr. Moss: Were you aware at that time that the Department of Agriculture was paying the expenses of such members of the referee board and such other employees of the Department of Agriculture as came to Indianapolis and appeared there to testify?

Mr. Bingham: Well, at that time I think none of them had come to Indianapolis. We took depositions first. With perhaps one or two exceptions at least, we took these depositions, especially the far-away depositions, we took those first. I knew from the testimony of the witnesses, the members of the referee board, that they were being paid by the government.

Mr. Higgins: That appears in the testimony, does it not?

Mr. Bingham: It appears in the testimony, and it appears in a private conversation with Dr. Herter, of New York, in talking with him at his cottage at Mount Desert Island, Me. He told me that was true, and my recollection is that he afterwards so testified in the case.

Mr. Moss: When these members of the referee board appeared and gave their testimony, did they qualify as expert chemists or were they testifying in their capacity as members of the referee board?

Mr. Bingham: Oh, they testified as experts and testified as to the results of all their investigations as members of the referee board, and everything else that anybody asked them about.

Mr. Moss: You took quite a number of depositions in favor of the plaintiff in this case—that is, such depositions were taken?

Mr. Bingham: Yes; quite a number.

Mr. Moss: Were any of the depositions taken by Williams Bros. and Curtice Bros. taken from men who were employees of the Department of Agriculture or connected with the Department of Agriculture?

Mr. Bingham: If you say that the members of the referee board and their subjects and helpers, as I call them, were employees, I should say "yes." Now, as to whether or not any of the regular employees of the Department of Agriculture gave depositions, I am not quite sure about that.

Mr. Moss: But these were regular employees?

Mr. Bingham: They testified to having been paid for their services.

Mr. Moss: Within your knowledge, did the Curtice Bros. or Williams Bros. have to appeal to a court of law in order to secure compulsory process in order to have such person appear and testify?

Mr. Bingham: No; they did not have to. I do not know of any, and I am satisfied they did not have to do anything of that kind.

Mr. Moss: Do you know of their making any application for any employee of the Department of Agriculture to testify in behalf of the plaintiffs and that they were refused?

Mr. Bingham: I do not know.

Mr. Moss: You do not know of any such case?

Mr. Bingham: No.

Mr. Moss: On the part of the State of Indiana did you wish to secure the testimony of any employee in the Department of Agriculture?

Mr. Bingham: Yes, sir.

Mr. Moss: Will you state, judge, who it was, if you can recall that, whom you desired to secure the testimony of?

Mr. Bingham: We desired to secure the testimony of Dr. Harvey Wiley, the chief of the Bureau of Chemistry, and of the subjects that constituted the so-called poison squad that served when Dr. Wiley was making his benzoate of soda test, as I should call it, and also the helpers. That would be Dr. Bigelow and his chemist and several other chemists and clerks who helped to make up and tabulate the result of the investigation. I wanted to take all those depositions.

Mr. Moss: To whom did you make your first application for the testimony of those persons whom you wished to give evidence?

Mr. Bingham: Well, I really did not apply to the Agricultural Department first. I may say that I was under the impression that I would have some trouble about having Dr. Wiley come to Indianapolis. I was desirous, if I could, of having Dr. Wiley come in person to Indianapolis and testify before the master. I thought it would be better than to have his deposition. Well, I did apply first to Dr. Wiley. Dr. Wiley said to me that he would prefer that I confer with Secretary Wilson or the Department of Agriculture—I don't know which—with reference to procuring his attendance at Indianapolis, and Dr. Wiley was the first one; and I am not quite sure whether I personally did that or had Mr. Thompson, my assistant, do that. He came down to Washington and had a conference with Dr. Wiley in my absence and at my suggestion—I am not quite clear whether it was myself at first; I think perhaps I wrote Dr. Wiley first; I am not sure about it.

Mr. Moss: Then you did indicate a desire to have Dr. Wiley appear at Indianapolis to testify in the case?

Mr. Bingham: Yes.

Mr. Moss: And coupled with that request was there also a request that the Department of Agriculture should pay his expenses?

Mr. Bingham: Well, I do not think I made any request of that kind. I think I requested the attendance of Dr. Wiley and called attention to the fact that the members of the referee board had testified at the request of the Secretary of Agriculture.

Mr. Moss: What reply did you get from this request for Dr. Wiley's appearance at Indianapolis; was the request granted?

Mr. Bingham: No; the request was not granted.

Mr. Moss: Was it refused?

Mr. Bingham: It was put in this way: That the Agricultural Department had made a report which was contrary to that of Dr. Wiley, and that it might appear that the department would be put in the attitude of not sustaining the referee board or not being in sympathy with its decision—I do not remember the exact language—and suggested that we had better cause process to issue and take his deposition in the regular way.

Mr. Higgins: Do you think that was the suggestion of the Secretary?

Mr. Bingham: It was a letter signed by Secretary Wilson, I remember. That letter, however, was not addressed to me personally. I call attention to that.

. . . . . .

Mr. Moss: There were some papers, judge, that you desired to secure from the Bureau of Chemistry, were there not?

Mr. Bingham: Yes.

Mr. Moss: Please state whether or not you had any difficulty in securing those papers.

Mr. Bingham: In the matter of securing the papers I called at the department and everybody over there seemed to be kind enough and perfectly willing, providing it was satisfactory to the secretary and Solicitor McCabe, but were under the impression that it was not agreeable to give out the papers, and, as I remember, I prepared a written request as to what I wanted and what I did want was the report of Dr. Wiley on this test—the benzoate of soda test. I explained to those in charge of the department that the referee board's report had already been introduced, a certified copy given by complainants, and that what I wanted was the certified copy of the report by Dr. Wiley, and that I did not want any more than that, that the other was all in and would encumber the record. They took that under advisement, counseled somebody, some attorney was there, and after a considerable time I was given to understand that if the complainants consented that they would furnish the certified copy.

Mr. Moss: That is, if the Curtice Bros. and Williams Bros. were willing——

Mr. Bingham: They did not put it just that way.

Mr. Moss: That, in effect, was the meaning, was it not?

Mr. Bingham: Yes; that was. Then I wrote a rather impudent note—at least I tried to make it impudent; I do not know whether I succeeded or not—to the Agricultural Department, in which I said that the complainants had consented that the department might furnish this information; and then came along a very elaborate report, including—starting in with the beginning of all this benzoate of soda test of Dr. Wiley's, the old order that was to go into effect, and that was reversed, and then the report and the reversal of that order of Dr. Wiley, and then the referee board's report tacked onto it with gold seal and ribbons, and everything necessary to make it appear very formidable. There were about a thousand pages of that report of the referee board, and I objected very seriously to having that forced into the record when I was trying to get only the report of Dr. Wiley, and through the courtesy of counsel——

Mr. Higgins: You mean you objected to the master——

Mr. Bingham: Oh, I called up the department and telephoned to them and told them that what I wanted was a certified copy of this particular report, and they had my written request for it. They knew what I wanted. And then through the courtesy of the counsel for the complainants I finally introduced a copy of Dr. Wiley's report, not certified.

Mr. Moss: I will ask you if the State of Indiana was required to give consent before the report of the Remsen board or any official documents of that kind were introduced?

Mr. Bingham: None whatever.

Mr. Moss: But before you could get this report from the department the complainants had to join you in the request?

Mr. Bingham: Well, they sent over that sort of a statement to me. As I remember, it was on a card or something like that. I am not sure but what that memorandum is among the papers at Indianapolis. I don't remember exactly about it.

Mr. Moss: I will ask you if at any time during the taking of these depositions you received on behalf of the State of Indiana any encouragement or cooperation on behalf of any official of the Department of Agriculture?

Mr. Bingham: Voluntarily, no; but I may say this for Dr. Wiley: When I said to him that I wanted to take his deposition and question him about whether he would testify as an expert or not—I wanted his opinion of the result—he said that he would testify and that he would answer any questions that were put to him; that he would not hesitate to testify to anything that he was able to testify about.

Mr. Moss: He explained to you that he was not in a position to act voluntarily, did he not?

Mr. Bingham: He explained to me with reference to that particular thing that he did not propose to have any padlock put on his mouth. I do not know that I am giving his exact language, but that is practically what he said to me.

Mr. Moss: Now, judge, you did this hard work for the State of Indiana. Was your purpose the excluding of benzoate of soda from being sold in the State of Indiana, or was it to preserve the pure-food law of the State of Indiana?

Mr. Bingham: It was, of course, to preserve the pure-food law of the state.

Mr. Moss: You were making the fight to prevent the pure-food law of the State of Indiana from being stricken from the statute books?

Mr. Bingham: Yes; to keep it from being destroyed on account of its being declared unconstitutional.

Mr. Moss: And in making this fight to save the pure-food law of the State of Indiana did you receive any cordial cooperation on the part of the Department of Agriculture's officials, the heads of it?

Mr. Bingham: I received no cooperation. I have described that.

Mr. Moss: Yes; but I wanted to summarize it. Is there any other statement that you care to make in regard to this matter that you wish to go into the record? I will say to the committee that I did not have time to confer with the judge, and that is the reason I ask him to make any other statement that he wishes to make in order to make the record complete.

Mr. Bingham: Of course I do not know that I am in a position to volunteer anything. I would like to say this: That out in California Dr. Taylor testified fully and I cross-examined him fully, and they reported back that the stenographer had not been able to report the examination correctly; that counsel for complainant had been out there for thirty or sixty days, and much of the work Dr. Taylor testified about was conducted after the attorney got out to California and after the examination out there which they claimed the stenographer did not get an intelligent report of.

Dr. Taylor continued his investigations, and counsel for the complainant continued to remain in California, and when we came to the final hearing before the master at which Dr. Taylor testified in person, he testified to many of the things that he had developed after we had taken his deposition out there and several points which had been raised in my cross-examination when I was out there taking his deposition. Dr. Long, of Chicago, testified, as I remember, that he was not asked by the Secretary of Agriculture to appear and testify, but that he came at the instance of the complainant. I do not remember whether he said he paid his expenses or not. Dr. Remsen and Dr. Herter's depositions were taken at Dr. Herter's cottage at Mount Desert Island, Me.: Dr. Chittenden's deposition was taken at New Haven, and then he came on to Indianapolis afterwards and testified in person.

[Next week additional testimony will be published.]

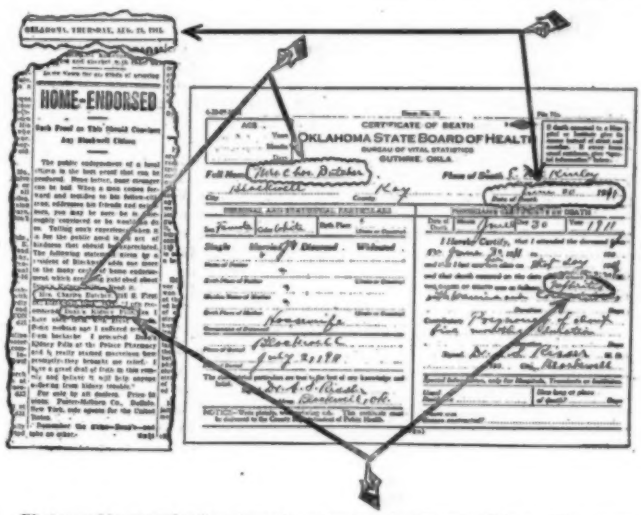
DOAN'S KIDNEY PILLS

A Testimonial that Proved a Boomerang

From a scientific standpoint—which merely means from a standpoint of actual facts—all "patent-medicine" testimonials are valueless. As a business asset of the "patent-medicine" maker, however, they are indispensable. Many nostrum manufacturers attempt to stimulate a local demand for their wares by publishing local testimonials, that is, testimonials from persons in the same locality as that in which the advertisements appear. From an advertising standpoint, there is but one objection to this: the very element that makes a local testimonial of value may, if great care be not taken, prove a boomerang. We present a case of this kind.

The Blackwell (Okla.) *News* for August 24, 1911, contained an advertisement in which a Mrs. Charles Butcher of that city testified to the virtues of Doan's Kidney Pills. As a matter of fact, Mrs. Charles Butcher had been dead nearly two months before the advertisement appeared; and she died of kidney disease!

From the standpoint of the advertiser, this episode merely means poor business management. From the standpoint of the public it means more. Doan's Kidney Pills are a fraud and a dangerous fraud. While they are advertised to "cure all kidney ills" the assertion is a false one. While they are said to be "a simple vegetable remedy," the analysis contradicts this. Here it is:



Photographic reproduction (greatly reduced) of a Doan's Kidney Pills advertisement that appeared in the Blackwell (Okla.) *News*, August 24, 1911, and a certified copy of the death certificate of Mrs. Charles Butcher, Blackwell, Okla. The advertisement contains a testimonial by Mrs. Charles Butcher, testifying to the value of Doan's Kidney Pills. The death certificate shows that Mrs. Butcher succumbed to kidney disease two months before her testimonial was published.

Oil of juniper	1 drop
Hemlock pitch	10 gr.
Potassium nitrate	5 gr.
Powdered fenugreek	17 gr.
Wheat flour	4 gr.
Corn starch	2 gr.

In twenty pills.

Aside from the positive dangers of self-drugging with so-called kidney cures there is an even greater negative danger that people afflicted with kidney disease will neglect proper treatment until they have reached the incurable stage. The viciousness of the "patent medicine" business lies not so much in its assault on the public purse as in its insidious dangers to the public health.

Marriages

LEROY CALKINS PORTER, M.D., Bancroft, Ida., to Miss Maybelle Pearl Houtz of Salt Lake City, Utah, at Houtz Dell, Ida., August 30.

ARTHUR H. MANN, JR., M.D., Baltimore, to Miss Mary E. Elgin of Poolesville, Md., at Baltimore, August 26.

JOSIE HELEN DOBSON, M.D., Washington, D. C., and Dr. Rollin Henry Denniston of Madison, Wis., August 30.

HARRY A. RUTLEDGE, M.D., Baltimore, to Miss Natalie W. Paynter at Alexandria, Va., August 29.

ANDROS GULDE, M.D., Chelsea, Mich., to Miss Eunice N. Jackson of Toronto, Ont., August 10.

EDITH GRACE GRANT, M.D., Greenup, Ill., and Fritz William Graff of Marshall, Tex., August 23.

RALPH C. HAMILL, M.D., Chicago, to Miss Margaret Hunt of Winnetka, Ill., September 2.

LEO STEINER, M.D., to Miss Lilian Lederer, both of Chicago, August 29.

Deaths

George Alexander DeSantos Saxe, M.D., prominent as a genito-urinary surgeon, died at his home in New York City, September 10, from heart disease, aged 35. He was born and received his preliminary education in St. Petersburg, and graduated from the College of Physicians and Surgeons, New York City, in 1898. He was assistant pathologist to Columbus Hospital from 1901 to 1904, and since 1901 has been assistant to the chair of genito-urinary surgery in the New York Post-Graduate Medical School. His society membership includes the American Medical Association; the American Urological Association; the National Association for the Prevention of Tuberculosis; the American Society of Social and Moral Prophylaxis; and the New York Academy of Medicine. Shortly after his graduation he became connected with the *New York Medical Journal*, of which he was assistant editor up to the time of his death. He was also assistant editor of the *American Journal of Urinology* and an editorial writer for several other medical journals, author of a standard work on "Examination of the Urine" and joint editor "Blackboard Headings on Surgery."

William C. Phelps, M.D. University of Buffalo, N. Y., 1866; a member of the American Medical Association; professor of surgical anatomy in his alma mater and familiarly known as "Uncle Billy" for many years to the students of the University of Buffalo; in the early seventies surgeon of the police department; and in 1882 and 1883 health physician of Buffalo; consulting surgeon and president of the staff of the Erie County Hospital and surgeon to the Buffalo General Hospital; at one time surgeon of the Seventy-Fourth Infantry, N. G., N. Y., died at his home in Buffalo August 27, after a long illness following a fracture of the patella, aged 66.

Ernest J. Barnes (license, Ohio, 1896), a practitioner since 1879; a member of, and several times a delegate to, the Ohio State Medical Association; president of the Licking County Medical Society in 1905; formerly surgeon of the Wabash and Columbus, Hocking Valley and Toledo railways; surgeon to the Ohio Electric Railway Company; mayor of Granville, O., and formerly a member of the board of education and a member of the village council of Hebron; died at his home in Granville, August 23, from pernicious anemia, aged 54.

Jesse H. Smith, M.D. Rush Medical College, 1860; for sixteen years a practitioner of Cedar Rapids, Iowa, and since 1869 president of the Farmers' Insurance Company, Cedar Rapids; vice-president of the Cedar Rapids and Iowa City Railway and Light Company; thrice mayor of Cedar Rapids; for four years state senator from Linn County; president of St. Lukes' Hospital since its organization in 1877; died at his home in Cedar Rapids, August 29, aged 74.

George Scott Foster, M.D. University of Vermont, Burlington, 1873; a member of the Vermont State Medical Society; senator from Windham County in 1896; for thirteen years a member of the board of supervisors of the state insane; for fifteen years a member of the local pension examining board and for twelve years superintendent of schools, died at his home in Putney, August 18, from diabetes, aged 63.

Ernest Sargent Pillsbury, M.D. Cooper Medical College, San Francisco, 1897; formerly editor of the *Los Angeles Medical Journal;* secretary of the board of trustees of the College of Physicians and Surgeons, Los Angeles, and secretary of the Los Angeles Academy of Medicine; aged 43; was instantly killed September 3, when his automobile rolled down an embankment near Los Angeles.

T. Artemas Borton, M.D. Starling Medical College, Columbus, O., 1867; a member of the Indiana State Medical Association; a consulting physician to the Orphan's Home of Northern Indiana, Plymouth; for more than fifty years a practitioner of Marshall County; founder of the Plymouth Sanitarium; died at his home in Plymouth, August 25, from senile debility, aged 79.

George B. McGoogan, M.D. Fort Wayne (Ind.) Medical College, 1886; for many years in the government service, first in the weather bureau, later deputy collector of internal revenue and since that time in the diplomatic service; United States consul at Progreso, Mexico; died in a hospital in Mobile, Ala., August 29, from fever, aged 48.

William Blythe Lane, M.D. Bellevue Hospital Medical College, 1864; a member of the Medical Society of the State of New York; acting assistant surgeon United States Army in 1864 and 1865; a director of the Manhattan Life Insurance Company since 1872, and vice-president of the company from 1901 to 1910; died at his home in Brooklyn, August 27, aged 73.

John R. Mauk, M.D. Starling Medical College, Columbus, Ohio, 1869; a member of the Indiana State Medical Association; for twelve years a member of the Wayne County pension board and in 1880 a member of the state legislature; died at his home in Cambridge City, August 29, from carcinoma of the stomach, aged 79.

Henry Arnold, M.D. University of Vermont, Burlington, 1880; a member of the Rhode Island Medical Society; chairman of the executive committee of the Foster Old Home Day, was stricken with cerebral hemorrhage during this celebration, at Foster Center, August 24, and died four hours later, aged 56.

George Faulkner, M.D. Harvard Medical School, 1847; one of the oldest practitioners of Jamaica Plains, Boston; founder of the Faulkner Hospital, Jamaica Plains, which was opened in 1901; a member of the Massachusetts Medical Society; died at his home August 27 from senile debility, aged 92.

Henry Kay Kerr, M.D. Trinity Medical College, Toronto, Ont., 1881; University of Toronto, 1881; a member of the Medical Society of the State of New York; for more than twenty years a practitioner of Hammond; died at his home in Watertown, August 22, from cardiac asthma, aged 54.

John Knox, M.D. Medical College of the State of South Carolina, Charleston, 1878; for many years a practitioner of Mecklenburg County, N. C., and a member of the county medical society; died at his home in Pineville, August 21, from septicemia following a carbuncle of the neck, aged 61.

William H. Scott, M.D. McGill University, Montreal, 1894; a member of the Michigan State Medical Society; for several years a surgeon on transatlantic steamers and thereafter a practitioner of Kalamazoo; died in Borgess Hospital in that city, August 27, from heart disease, aged 41.

Theophilus Steele, M.D. Kentucky School of Medicine, 1865; of New York City; a confederate veteran and lieutenant-colonel on the staff of General Morgan during the Civil War; died at the home of his daughter in Bellmore, Long Island, August 23, aged 77.

Franklin P. Scott, M.D. University of Louisville, Ky., 1871; of Monongahela; for several terms president of the Washington County (Pa.) Medical Society; died in Washington, Pa., August 28, from carcinoma, aged 72.

Cornelius W. De Baun, M.D. Albany (N. Y.) Medical College, 1887; for six terms coroner of Montgomery County, N. Y.; died at his home in Fonda, N. Y., August 18, from cerebral hemorrhage, aged 46.

Guy Clifford Powell, M.D. Louisville (Ky.) Medical College, 1898; of Peoria; a specialist on diseases of the ear; died in Presbyterian Hospital, Chicago, August 25, from rheumatic endocarditis, aged 42.

Fred R. Stoner, M.D. University of Nashville, Tenn., 1896; of Decatur, Ill., died in that city August 18, from the effects of an accidental gunshot wound of the chest, aged 38.

William B. Hooser, M.D. Barnes Medical College, St. Louis, 1902; afterward a clergyman; died at his home in Meriden, Wyo., August 11, from cerebral hemorrhage, aged 35.

William Henry Belknap, M.D. University of Michigan Homeopathic College, Ann Arbor, 1900; College of Physicians and Surgeons, Chicago, 1902; a member of the American Medical Association; died at his home in Greenville, Mich., August 26, from disease of the heart and kidneys, aged 39.

James Douglas Baker, M.D. University of Michigan Homeopathic Medical College, Ann Arbor, 1878; chairman of the executive board of McMinnville, Ore., since 1893; died at his home in that place, Nov. 25, 1910, aged 62.

Charles F. Remme, M.D. Missouri Medical College, St. Louis, 1878; a member of the St. Louis Medical Society; died in his apartments in St. Louis, August 25, from cerebral hemorrhage, aged 62.

Leslie McClain, M.D. Medical College of Ohio, Cincinnati, 1875; a member of the Indiana State Medical Association; died at his home in Terre Haute, August 19, aged 62.

Gaston Gladu, M.D. Tulane University, New Orleans, 1893; of Bremond, Texas; was shot and instantly killed in that place August 19, as a result of a family quarrel.

George W. Dollison (license, Ohio, years of practice, 1896), one of the oldest practitioners of Hocking County, Ohio, died at his home in Logan, August 16, aged 82.

Fred Willard Lester, M.D. Rush Medical College, 1879; for several years a practitioner of David City, Neb., died at his home in Aurora, Ill., August 24, aged 57.

Horace L. Ash, M.D., University of Heidelberg, Germany, 1874; died at the home of his son in Lansing, Mich., January 7, from cerebral hemorrhage, aged 68.

Robert Gordon, M.D. McGill University, Montreal, 1868; for thirty-five years a practitioner of Arlington, Ill., died in Seattle, Wash., August 8, aged 69.

John Kruse, M.D. Berlin, Germany, 1864; for many years a resident of Bozeman, Mont.; died in the Deaconess Hospital in that city, August 18, aged 76.

Warren Wallace Merrill, M.D. Bennett Medical College, Chicago, 1880; died at his home in Rensselaer, Ind., August 29, from acute gastritis, aged 54.

Joseph W. Brinkerhoff, M.D. University of Wooster, Cleveland, Ohio, 1873, of Burbank, Ohio, died in Cleveland, August 16, from heart disease, aged 69.

James M. Bridges, M.D. a member of the Missouri State Medical Association and once its president; died at his home in Joplin, Dec. 31, 1910, aged 74.

William H. Burgesser, M.D. Missouri Medical College, St. Louis, 1876; died at his home in Joplin, Mo., August 23, from cerebral hemorrhage, aged 59.

Anton Posch, M.D. University of Innsbruck, Austria, 1881; died at his home in Round Top, Texas, August 21, from cerebral hemorrhage.

John P. Youmans (license, Ark., years of practice, 1881); a veteran of the Civil War; died at his home in Lewisville, June 8, aged 79.

Joel W. Nixon, M.D. University of Baltimore, Md., 1878; died at his home in St. Louis, August 25, from heart disease, aged 62.

H. Jefferson Foster, M.D. Eclectic Medical Institute, Cincinnati, 1882; died recently at his home in Cucamonga, Cal.

W. E. Jennings (registration, Texas, years of practice, 1907); died at his home in Burnet, August 29, aged 67.

Thomas J. Jones, M.D. Drake University, Des Moines, 1887; died at his home in Des Moines, August 20, aged 57.

Correspondence

Iodin in Sterilization of the Skin

To the Editor:—In view of the fact that in numerous articles which have been recently published on the subject of iodin sterilization of the skin, mention is made of the paper of Grossich, published in the *Zentralblatt für Chirurgie* (October, 1908) [summarized in THE JOURNAL, Dec. 5, 1908, p. 2012], as being the first recorded use of iodin for that purpose, I wish to say that I used iodin for this purpose in 1905 and published a description of my method in THE JOURNAL, "Some of the Uses of Iodin in Surgical Practice," April 14, 1906, p. 1102. My method was described in a paper prepared for the February, 1906, meeting of the Tri-State Society of Virginia and the Carolinas, which was published in *American Medicine*, November, 1906. The method was again described in a paper prepared for the Hot Springs meeting of the Mississippi Valley Medical Association, Nov. 8, 1906, and published in the *Therapeutic Gazette*, May 15, 1907.

JOHN E. CANNADAY, Charleston-Kanawha, W. Va.

Anesthetization of Sleeping Persons

To the Editor:—In THE JOURNAL, July 29, page 428, is a report that chloroform was given to two sleeping children without awakening them. During the winter of 1910 I administered chloroform to a child of about two years of age, while she slept, without her making any show of awakening.

ERWIN C. CABY, M.D., Welcome, Wis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CARE OF THE HYPODERMIC NEEDLE

To the Editor:—I use to my entire satisfaction a simple and effective method of caring for the hypodermic outfit as follows: After the needle has been used, it is removed, the barrel is drawn full of 95 per cent. alcohol: the needle is replaced and the alcohol expelled. The plunger is then forced in and out half a dozen times or more and the instrument placed in its case. This procedure is repeated before using. It is a pleasure to find the needle in perfect condition when one wishes to use it. I might add that I have discarded the exasperating wires that are usually found in most hypodermic cases; I depend solely on thorough sterilization with alcohol and find the process satisfactory, saving both time and patience. The outside of the needle and barrel is cleansed with alcohol on absorbent cotton or gauze.

J. C. JENKINS, Lititz, Pa.

ANSWER.—It may be fair to question whether or not our correspondent will secure a clean needle by this method. We understand that this procedure is primarily aimed at perfect cleansing of the needle to avoid rust and clogging. For this purpose pure alcohol is the best, but for sterilization, a partly diluted alcohol may be better. This question was brought up in THE JOURNAL, June 10, 1911, page 1741, and June 24, page 1900. It was stated that full strength alcohol is not as effective a germicide as 70 per cent., and that even 70 per cent. requires ten minutes to kill the staphylococcus. It will be noted that Dr. Jenkins does not specify that he holds the alcohol in the needle for any certain length of time. Is it not better and safer to place the needle in a few tablespoonfuls of water and boil for three minutes to insure absolute asepsis, as well as to secure sterile water?

DIAGNOSIS OF INFLUENZA

To the Editor:—Your editorial on the frequency of mistakes in diagnosis of influenza leads me to ask for the full technic for finding the germ; also such description of the germ as will enable one to identify it when found. Does it have to be grown, or may it be demonstrated in the discharges from the patient? Would it help in its identification if you were to give a photograph of its appearance? Is it necessary before making a diagnosis of influenza to demonstrate the presence of the germ?

T., Toledo.

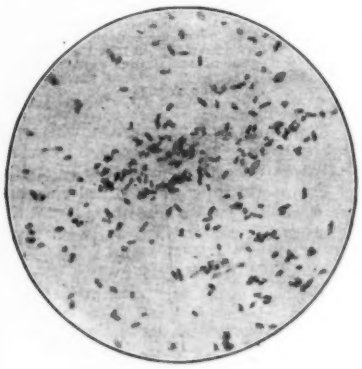
ANSWER.—The technic for finding influenza bacilli in various discharges consists in the direct examination of smear preparations and in the cultivation of the organism on suitable culture media. The smear preparations are made by spreading a loopful or a drop of the material to be examined (sputum, pus, cerebrospinal fluid, etc.) on a glass slide or a cover-glass, and allowing it to dry and become fixed in the flame. A very satisfactory and simple stain is fresh dilute carbol-fuchsin made by diluting ordinary carbol-fuchsin (such as is used for staining tubercle bacilli) twenty-five or thirty times with distilled water. This is applied for from two to three minutes, the slide is washed with water, dried and mounted in balsam. When other organisms are present in the material, as is almost always the case with sputum, it is desirable to stain first with Gram's stain and then use dilute carbol-fuchsin as a counter stain. By this method, the Gram-positive organisms such as pneumococci and streptococci are stained dark purple or nearly black and the influenza bacilli, which are Gram-negative, stain light red. The influenza bacillus is very minute, being one of the smallest organisms known. It is about three

times as long as it is broad and the ends usually stain deeper than the center. It may be seen inside the polynuclear leukocytes, especially late in the course of the infection. There is no characteristic arrangement of the organisms outside the leukocytes though they are often observed in loose clusters.

The influenza bacillus requires for growth the presence of hemoglobin in the culture medium. A minute quantity is sufficient. As the bacillus usually occurs in sputum, in which practically always other organisms are present, the plate method is used for isolation. In this method, tubes of melted agar, to which a few drops of sterile defibrinated blood have been added, are inoculated with the material, and poured plates are made and incubated. The influenza colonies, should they be present, are visible in twenty-four hours as small, round, non-hemolytic, "dewdrop-like" colonies and are distinctly larger and more numerous around colonies of other organisms such as pneumococci, streptococci, etc. This latter phenomenon, known as symbiosis, is very striking and constant and is characteristic of this organism. The colonies may then be transferred to blood-agar slants and thus pure cultures obtained and further studied.

From the examination of smear preparations alone, one can only be suspicious of the presence of the germ. Cultivation and isolation of the organism should be made for positive identification.

The term "influenza" should be reserved for those conditions caused by infection with the influenza bacillus. There occur not infrequently diseases, especially of the upper respiratory tract, both in sporadic and epidemic forms, which clinically cannot be differentiated from influenza but which are caused by other germs, such as streptococci and pneumococci. For this reason the diagnosis of influenza should not be made without a bacteriologic examination.



The bacillus of influenza

The illustration herewith given is not very satisfactory, as this department is not printed on the calendered paper necessary to bring out the details; for better views the reader is referred to text-books which take up the subject.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Sept. 9, 1911.

Winn, Robert N., major, granted one month and twenty-one days' leave of absence.

Koyle, Fred T., M.R.C., ordered to duty as surgeon of the transport *Kilpatrick*.

Ford, Joseph H., major, ordered to San Antonio, Texas, for duty with the 10th Infantry.

Jones, George B., M.R.C., assigned to duty with the 10th Infantry, San Antonio, Texas.

McAlister, John A., Jr., dental surgeon, reported at Jefferson Barracks, Mo., for duty on examining board.

Ingalls, R. E., dental surgeon, returned to Ft. Douglas, Utah, from detached duty.

Stone, Frank P., dental surgeon, left Presidio of Monterey, Cal., for station at Fort Barrancas, Fla.

Lowe, Thomas S., M.R.C., left Presidio of Monterey, Cal., on three months' leave of absence.

Gunckel, George L., dental surgeon, returned to temporary duty at Fort McPherson, Ga., from leave of absence.

The following changes in the stations of officers of the medical corps and of the medical reserve corps are ordered:

The following named officers will proceed to San Francisco on the transport to sail from Manila, P. I., on or about Jan. 15, 1912, and on arrival report by telegraph to the Adjutant General of the Army for further orders: Major Albert E. Truby, Medical Corps; Capt. Philip W. Huntington, Medical Corps; First Lieut. George H. McLellan, Medical Corps; First Lieut. Arnin Mueller, Medical Corps; First Lieut. Clarence E. Fronk, Medical Corps; First Lieut. Percy G. Drake, Medical Reserve Corps; First Lieut. Ziba L. Henry, Medical Reserve Corps; First Lieut. Herbert L. Freeland, Medical Reserve Corps; First Lieut. Maurice Buchsbaum, Medical Reserve Corps.

The following named officers will proceed to San Francisco on the transport to sail from Manila, P. I., on or about Feb. 15, 1912, and on arrival report by telegraph to the Adjutant General of the Army for further orders: First Lieut. William R. Dear, Medical Corps; First Lieut. Clarence A. Treuholt, Medical Corps; First Lieut. Frederick S. Wright, Medical Corps; First Lieut. Lee R. Dunbar, Medical Corps; First Lieut. Addison D. Davis, Medical Corps; First Lieut. Elsworth Wilson, Medical Reserve Corps; First Lieut. William M. Archer, Jr., Medical Reserve Corps; First Lieut. Henry F. Philips, Medical Reserve Corps; First Lieut. Robert Lemmon, Medical Reserve Corps, First Lieut. Oswald F. Henning, Medical Reserve Corps.

The following named officers will proceed to Manila, P. I., on the transport sailing from San Francisco on or about Jan. 5, 1912, and on arrival will report in person to the commanding general, Philippines Division, for assignment to duty: Capt. Paul L. Freeman, Medical Corps; First Lieut. Thomas J. Flynn, Medical Corps; First Lieut. Edward L. Napier, Medical Corps; First Lieut. Thomas H. Johnson, Medical Corps; First Lieut. Edward M. Welles, Jr., Medical Corps; First Lieut. William B. Borden, Medical Reserve Corps; First Lieut. Albion McD. Coffey, Medical Reserve Corps; First Lieut. Wilson Murray, Medical Reserve Corps; First Lieut. George R. Clayton, Medical Reserve Corps; First Lieut. Ralph W. Newton, Medical Reserve Corps.

The following named officers will proceed to Manila, P. I., on the transport sailing from San Francisco on or about Feb. 5, 1912, and on arrival will report in person to the commanding general, Philippines Division, for assignment to duty: Captain Frank W. Weed, Medical Corps; First Lieut. Alexander T. Cooper, Medical Corps; First Lieut. Condon C. McCormack, Medical Corps; First Lieut. Madison H. Bowman, Medical Reserve Corps.

McAfee, Larry B., first lieut., is relieved from duty at the Army and Navy General Hospital, Hot Springs, Ark., to take effect at such time as will enable him to comply with this order, and will proceed at the proper time to San Francisco, and take the transport to sail from that place on or about Feb. 5, 1912, for Hawaii Territory, and on arrival at Honolulu will report in person to the commanding officer, Fort Shafter, for duty and by letter to the commanding general, Western Division.

The following named officers of the Medical Reserve Corps, recently appointed, are ordered to active duty in the service of the United States, on account of an existing emergency, to take effect Sept. 20, 1911, and will repair to this city at the proper time and report in person on Oct. 2, 1911, to Colonel Louis A. LaGarde, Medical Corps, president of the Army Medical School, to take a course of instruction at that school: First Lieteuants Leo B. Allen, Morris H. Boerner, William G. Gill, Chester R. Haig, Robert M. Hardaway, Thomas E. Harwood, Jr., Howard L. Hull, George H. Hungerford, Charles P. Kennedy, Harry R. McKellar, Alvin C. Miller, Henry C. Osborn, Omar H. Quade, Charles M. Walson, William F. Wild, Neal N. Wood.

Each of the following named officers of the Medical Reserve Corps is relieved from duty at the station designated after his name, to take effect at such time as will enable him to comply with this order, and repair to this city at the proper time and report in person on Oct. 2, 1911, to Colonel Louis A. LaGarde, Medical Corps, President of the Army Medical School, to take a course of instruction at that school: First Lieutenants Harry H. Blodgett, Fort Riley, Kan.; Thomas W. Burnett, Fort Slocum, N. Y.; Philip B. Connolly, Fort Monroe, Va.; John G. Ingold, Fort Wayne, Mich.; Frederick C. A. Kellam, Jr., Walter Reed General Hospital, District of Columbia; Kermin W. Kinard, Ft. Ethan Allen, Vt.; Douglas W. McEnery, San Antonio, Tex.; Shelley U. Marietta, Ft. Sheridan, Ill.; John W. Meehan, Ft. Howard, Md.; Leopold Mitchell, Washington Barracks, D. C.; Luther R. Poust, Ft. Du Pont, Del.; Guy L. Qualls, Jefferson Barracks, Mo.; William P. J. Ruddy, Ft. Myer, Va.; Thomas E. Scott, Ft. Moultrie, S. C.; John W. Sherwood, Ft. Williams, Me.; Robert Skelton, Ft. Adams, R. I.; John H. Trinder, Ft. Jay, N. Y.; Samuel J. Turnbull, San Antonio, Tex.; Alfred P. Upshur, San Antonio, Tex.

Northington, N. G., lieut., relieved from duty at Fort Sam Houston, Tex., at such time as will enable him to comply with orders to the Philippines Division.

McMurdo, Hew B., M.R.C., recently appointed, is ordered to active duty Sept. 20, 1911, and ordered to Army Medical School, this city, October 9, for course of instruction.

Hess, Louis T., major, granted two months' sick leave of absence.

Hutton, Paul C., major, ordered to proceed to Fort Snelling, Minn., for temporary duty when his services are no longer required at San Antonio, Tex., and then to take station at Fort Howard, Md., as heretofore ordered.

McAfee, Larry B., lieut., relieved from duty at Army General Hospital, Hot Springs, Ark., and ordered to Fort Shafter, H. T., for duty.

Medical Corps, U. S. Navy

Changes during the week ended Sept. 9, 1911.

Ransdell, R. C., P. A. surgeon, detached from the *Baltimore* and ordered to the *Utah*.

Brown, H. L., P. A. surgeon, ordered to the *Baltimore*.

Cecil, A. B., asst.-surg., detached from the naval station, Guantanamo, Cuba, and ordered to the *Marietta*.

Irvine, W. L., asst.-surg., detached from the *Marietta* and ordered to the naval station, Guantanamo, Cuba.

Sanborn, C. F., A. A. surgeon, resignation accepted to take effect from Sept. 5, 1911.

Sutton, D. G., P. A. surgeon, detached from the *Indiana* and ordered to duty at the naval hospital, Annapolis, Md.

Wells, H., medical director, placed on the retired list from Sept. 17, 1911.

McDonell, W. N., P. A. surgeon, detached from the *Massachusetts* and ordered to the *Kansas*.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POSTGRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

[NOTE.—The pamphlets containing the outline of the postgraduate study course for county societies for the coming year are ready for distribution. Secretaries of county societies can secure supplies by writing to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Ave., Chicago.]

First Month—Second Weekly Meeting

CLASSIFICATION OF TUMORS: Work of Hamilton, Ribbert, Borst, Bland-Sutton, Lubarsch. Embryogenetic classification of Adami; Lepidic or "rind" tumors, and hylic or "pulp" tumors. Clinical classification.

FIBROMA: Gross and microscopic appearance, distribution.

LIPOMA: Size, number, distribution, varieties, gross and microscopic appearances.

CHONDROMA: Varieties, distribution, gross and microscopic appearances.

OSTEOMA: Varieties, number, gross and microscopic appearances. Odontomes.

MYOMA: Distribution, mixed tumors, gross and microscopic appearances.

MYXOMA: Gross and microscopic appearances. Secondary changes.

NEUROMA: Pathology, number, distribution.

Ganglionic neuroma. Neurofibromatosis. Molluscum fibrosum.

GLIOMA: Microscopic changes.

REFERENCE BOOKS FOR THE FIRST MONTH

Bland-Sutton: Tumors. Levings: Tumors.
Cathcart: Tumors. Adami: Pathology, vol. I.
Text-Books on Pathology and Surgery.
For a review of the literature on tumors consult the December numbers of *Progressive Medicine*.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

COLORADO: The State Capitol, Denver, October 3. Sec., Dr. David A. Strickler, 612 Empire Building.

GEORGIA: Homeopathic, Atlanta, October 10. Sec., Dr. R. E. Hinman, 106½ Whitehall Street.

IDAHO: Wallace, October 3-4. Sec., Dr. O. J. Allen, Bellevue.

ILLINOIS: Coliseum Annex, Chicago, October 26-28. Sec., Dr. J. A. Egan, Springfield.

IOWA: Capitol Building, Des Moines, September 19-21. Sec., Dr. Guilford H. Sumner.

LOUISIANA: New Orleans, October 19-21. Sec., Dr. A. B. Brown, 108 Baronne Street.

MICHIGAN: Legislative Bldg., Lansing, October 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, Minneapolis, October 3. Sec., Dr. W. S. Fullerton, St. Paul.

MISSOURI: Kansas City, September 25-27. Sec., Dr. Frank B. Hiller, Jefferson City.

MONTANA: The Capitol, Helena, October 3. Sec., Dr. W. C. Riddell.

NEW JERSEY: The State Capitol, Trenton, October 17-18. Sec., Dr. H. G. Norton, 429 E. State Street.

NEW MEXICO: The Capitol, Santa Fe, October 9-10. Sec., Dr. J. A. Massie.

NEW YORK: September 26-29. Mr. Harlan H. Horner, Chief of Examinations Division, Department of Education, Albany.

OKLAHOMA: Muskogee, October 10. Sec., Dr. John W. Duke, Guthrie.

RHODE ISLAND: Room 315 State House, Providence, October 5-6. Sec., Dr. Gardner T. Swarts.

UTAH: Salt Lake City, October 2-3. Sec., Dr. G. F. Harding, 310 Templeton Building.

WYOMING: Riverton, October 9-11. Sec., Dr. A. B. Tonkin.

Alabama July Report

Dr. W. H. Sanders, chairman of the Alabama State Board of Medical Examiners, reports the written examination held at Montgomery, July 11-14, 1911. The number of subjects examined in was 10; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 127, of whom 89 passed and 38 failed, including 1 osteopath. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Alabama, (1910) 75, 75, 75, 76, 79, 79; (1911) 75, 76, 76, 76, 77, 77, 77, 78, 78, 80, 81, 81, 81, 82, 83, 83, 83, 83, 83, 84, 84, 84, 84, 85, 85, 85, 86, 87, 89.4, 90.		
Birmingham Medical College, (1909) 75; (1910) 75; (1911) 75, 76, 76, 76, 79, 79, 79, 79, 80, 81, 81, 82, 82, 82, 84, 87.		
Georgetown University	(1911)	87
Atlanta College of Physicians and Surgeons	(1911)	77
Atlanta School of Medicine	(1911)	79, 81
American Medical Missionary College	(1910)	82
University of Louisville	(1911)	76
Tulane University of Louisiana, (1893) 75; (1909) 77; (1911) 76, 78, 79, 81, 82, 82, 82, 83, 85, 86.		
Johns Hopkins University	(1909) 75; (1911)	78, 82
University of Tennessee	(1911)	75, 76, 78
University of Nashville	(1911)	75, 78
Meharry Medical College	(1911)	75
Vanderbilt University	(1908) 77; (1911)	75, 76, 79, 79, 82
University of Virginia	(1911)	81, 89
FAILED		
University of Alabama, (1910) 69.2; (1911) 59.5, 69.6, 70.5, 73, 73.2.		
Birmingham Medical College, (1910) 57.5, 72.9; (1911) 66.4, 69.1, 69.2, 69.7, 73.		
Atlanta College of Physicians and Surgeons, (1910) 73; (1911)		69.9
Atlanta School of Medicine	(1911)	56.2
Medical College of Georgia	(1911)	52.6
Tulane University of Louisiana, (1910) 59.3; (1911) 67.5, 67.5, 72.4, 73.8.		
Barnes Medical College	(1910)	71.7
Leonard Medical School	(1911)	66.3
Meharry Medical College	(1911)	72.6
Memphis Hospital Medical College, (1910) 57.3, 58.6; (1911) 50.6, 55.7, 57.5.		
University of Tennessee	(1908)	68.8
College of Physicians and Surgeons, Memphis	(1908)	62.9
University of the South	(1907)	59.8
University of Nashville	(1911)	66
Vanderbilt University	(1911)	66.6, 70.5
Chattanooga Medical College	(1908)	64.7

Iowa February and June Reports

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Des Moines, Feb. 14-16, and June 5-7, 1911, and at Iowa City, June 8-10, 1911. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75.

At the examination held February 14-16, the total number of candidates examined was 8, of whom 6 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1910)	93.1
State University of Iowa, College of Medicine	(1906)	85
Medical School of Maine	(1892)	83
Ensworth Medical College	(1910)	75.5
Hahnemann Medical Coll. and Hosp., Philadelphia	(1909)	88
McGill University, Montreal, Quebec	(1901)	93.4
FAILED		
Keokuk Medical College, Coll. of Phys. and Surgs.	(1904)	70.1
Victoria University, Toronto, Ontario	(1890)	65.7

At the examination held at Des Moines, June 5-7, the total number of candidates examined was thirty-four, of whom thirty-one passed and three failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Denver and Gross College of Medicine	(1910)	90
Northwestern University Medical School, (1904) 90.4; (1911) 84.6, 89, 90.9, 93.		
Hahnemann Medical College and Hospital, Chicago	(1911)	83.9, 86.4
College of Medicine University of Illinois	(1911)	88, 88.1
Rush Medical College	(1911)	86.6
Drake University, (1911) 85.5, 86, 87.7, 87.9, 87.9, 88.7, 90, 90.7, 91.1, 91.6, 93.4, 93.9, 94, 94.4.		
Barnes Medical College	(1911)	84.4
Creighton Medical College	(1911) 79, 80,	81.4, 85.2
Albany Medical College	(1905)	90.6
FAILED		
Hahnemann Medical College and Hospital, Chicago	(1911)	71.9
Baltimore Medical College	(1908)	77*
University of Pittsburg	(1907)	67.9

At the examination held at Iowa City, June 8-10, the total number of candidates examined was twenty-seven, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
State University of Iowa, College of Medicine, (1897) 85.2; (1911) 84, 84.7, 85, 85.4, 86.7, 87, 87.1, 87.7, 88.2, 88.5, 88.5, 89, 89, 89, 89.2, 89.6, 89.7, 91, 93.1, 93.5, 94.		
State University of Iowa, Homeopathic College, (1911)		83.1, 85, 86.9
Jefferson Medical College	(1911)	91
University of Pennsylvania	(1909)	92

* Fell below 60 in one subject.

Iowa Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that at the meetings held by that board April 26 and July 19-21, 1911, 32 candidates were licensed through reciprocity. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1907)	Maryland
Denver and Gross College of Medicine	(1907)	Colorado
Bennett Medical College	(1907)	Illinois
Coll. of Phys. and Surgs., Chicago	(1903) (1904)	Illinois
Hahnemann Med. Coll. and Hosp., Chicago	(1905)	Illinois
Northwestern University Med. Coll.	(3, 1909) (2, 1910)	Illinois
Chicago College of Medicine and Surgery	(1909)	Illinois
Rush Medical College	(1909)	Illinois
Keokuk Medical College, Coll. of Phys. and Surgs.	(1900)	Missouri
University of Louisville	(1909)	Illinois
Woman's Medical College of Baltimore	(1910)	Maryland
Hamline University	(1908)	Minnesota
Washington University, St. Louis	(1905)	Missouri
St. Louis College of Physicians and Surgeons	(1909)	Illinois
Ensworth Medical College	(1909)	Missouri
Marion-Sims College of Medicine	(1898)	Indiana
University Medical College, Kansas City	(1906)	Missouri
University of Nebraska	(1910)	Nebraska
Creighton Medical College	(1907) (1910)	Nebraska
Starling-Ohio Medical College	(1910)	Ohio
Jefferson Medical College	(1909) Nebraska; (1887)	Ohio
Marquette University, Milwaukee	(1908) (1909)	Wisconsin

Maine July Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Augusta, July 6-7, 1911. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 50, of whom 46 passed and 4 failed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Yale University	(1907)	88
University of Louisville	(1910)	76
Medical School of Maine, (1879) 77; (1889) 89; (1911) 82, 83, 85, 85, 86, 86, 88, 90.		
Baltimore Medical College	(1911)	85
Maryland Medical College	(1910)	81, 84
College of Physicians and Surgeons, Baltimore	(1911)	81
University of Maryland	(1909)	84
Harvard Medical School	(1908) 93; (1911)	86
College of Physicians and Surgeons, Boston, (1911) 76, 81, 82, 84, 86, 88.		
Tufts College Medical School, (1910) 90; (1911) 81, 83, 85, 87, 93		
Boston University	(1908)	88
Columbia University, College of Phys. and Surgs.	(1911)	84
Hahnemann Medical Coll. and Hosp., Philadelphia	(1910)	77, 88
Temple University	(1911)	88, 91
University of Pennsylvania, (1900) 90; (1909) 92; (1910) 85, 86, 91; (1911) 88.		
University of Vermont	(1899) 88; (1909)	76
McGill University, Quebec	(1910)	86

FAILED

Hahnemann Medical College and Hospital, Chicago	(1909)	74
Medical School of Maine	(1911)	80*
College of Physicians and Surgeons, Boston	(1911)	70, 72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Baltimore Medical College	(1908)	Maryland

* Fell below 60 in one or more subjects.

Michigan June Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Ann Arbor, June 13-15, 1911. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 65, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Cooper Medical College	(1904)	86.1
Chicago College of Medicine and Surgery	(1911)	84.7
Johns Hopkins University	(1910) 83.1; (1911)	85
University of Michigan, Dept. of Med. and Surg., (1908) 83.9; (1911) 79.9, 81.2, 81.3, 81.7, 82, 82.2, 83.3, 84.4, 84.6, 84.7, 84.8, 84.8, 85.2, 85.2, 85.2, 85.2, 85.3, 85.9, 86, 86.2, 86.2, 86.3, 86.4, 86.6, 86.6, 86.6, 86.7, 86.8, 87, 87.2, 87.2, 87.3, 87.3, 87.4, 87.6, 87.9, 88, 88.2, 88.4, 89.2, 89.3 89.5, 89.8, 90.3, 91.3, 91.4.	(1889)	85.7;
University of Michigan, Homeopathic Department, 83.2, 83.8, 86.6, 87.5, 87.5, 89.2, 89.2, 90.2.	(1911)	82, 82.8,
Cleveland-Pulte Medical College	(1911)	83.5
Jefferson Medical College	(1911)	85.5
University of Pennsylvania	(1908)	88.8

New Mexico April Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, April 10-11, 1911. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. Twenty-five candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Tennessee Medical College	(1891)	78.8
Gate City Medical College	(1907)	77.3

LICENSED ON PRESENTATION OF SATISFACTORY CREDENTIALS

College	Year Grad.	
Denver and Gross College of Medicine	(1904)	(1906)
Georgetown University		(1910)
College of Physicians and Surgeons, Chicago	(1897)	(1909)
Northwestern University Medical School	(1892)	(1906)
Hahnemann Medical College and Hospital, Chicago		(1886)
Hospital College of Medicine, Louisville		(1903)
University of Louisville		(1892)
University of Maryland		(1909)
College of Physicians and Surgeons, Baltimore		(1892)
Barnes Medical College		(1898)
St. Louis College of Physicians and Surgs.	(1893) (1898)	(2, 1910)
New York University Medical College		(1884)
Medical College of Ohio		(1903)
Western Reserve University		(1908)
University of Pennsylvania		(1909)
Medico-Chirurgical College, Philadelphia		(1901)
University of Nashville	(1903)	(1904)
Queen's University, Kingston, Ontario	(1893)	

North Dakota July Report

Dr. H. M. Wheeler, former secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, July 5-7, 1911. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 18, all of whom passed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1911)	81, 84
Chicago Physio-Medical College	(1896)	75
University of Iowa, College of Medicine	(1902)	83
Keokuk Medical College, Coll. of Phys. and Surgs.	(1906)	80
University of Louisville	(1911)	91
Harvard Medical School	(1888)	86
University of Michigan, Dept. of Med. and Surg.	(1906)	81
University of Minnesota, Coll. of Med. and Surg.	(1910)	80
Minneapolis College of Physicians and Surgeons	(1903)	81
Barnes Medical College	(1899)	83
Creighton Medical College	(1911)	82
Jefferson Medical College	(1910)	89
Ohio Medical University	(1894)	85
Woman's Medical College of Pennsylvania	(1910)	85
University of Vermont	(1892)	78
Western University, London, Ontario	(1910)	84
University of Toronto, Ontario	(1911)	84

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Bennett Medical College	(1909)	Illinois
College of Physicians and Surgeons, Chicago	(1910)	Illinois
Hahnemann Medical Coll. and Hosp., Chicago	(1910)	Illinois
University of Maryland	(1909)	W. Virginia
University of Minnesota, Coll. of Med. and Surg. (1905) (1906)	(1904)	Minnesota
Hamline University	(1908)	Minnesota
Jefferson Medical College	(1905)	Minnesota
University of Vermont	(1908)	New Hamp.
Marquette University	(1910)	Wisconsin
Laval University, Quebec	(1904)	Maine

Oklahoma July Report

Dr. John W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Guthrie, July 11-15, 1911. The number of subjects examined in was 14; total number of questions asked, 120; percentage required to pass, 70. The total number of candidates examined was 74, of whom 52 passed, including 3 osteopaths and 22 failed, including 2 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1911)	88
College of Physicians and Surgeons, Little Rock	(1911)	72, 80
Atlanta College of Physicians and Surgeons	(1910)	77
Denver and Gross College of Medicine	(1910)	84
Hering Medical College	(1909)	87
Chicago College of Medicine and Surgery	(1911)	87

Chicago Homeopathic Medical College	(1897)	81
Hahnemann Medical College and Hospital, Chicago.	(1911)	85
Louisville Medical College	(1906)	77
Tulane University of Louisiana	(1911)	87
Flint Medical College	(1900)	79
Harvard Medical School	(1909)	75
Ensworth Medical College	(1911)	71
American Medical College, St. Louis	(1894)	88
University of Missouri	(1908)	85
St. Louis University	(1910) 80; (1911)	82
Univ. Medical College, Kansas City.	(1897) 80; (1911)	75, 77, 82
Barnes Medical College	(1911)	76
St. Louis Coll. of P. and S.	(1909) 79; (1911)	71, 80
Columbia Univ., Coll. of P and S.	(1911)	79
University of Oklahoma	(1911)	74, 76, 78, 80, 82, 83, 84, 87
Medico-Chirurgical Coll., Philadelphia.	(1903) 81; (1905)	76
Meharry Medical College	(1908) 70; (1909)	72, 73
Vanderbilt University	(1910) 91; (1911)	90
University of Nashville	(1893) 71; (1909) 84; (1911)	87
Fort Worth University	(1911)	84
University of Texas	(1910) 89; (1911)	85
Baylor University	(1911)	75

FAILED

University of Arkansas	(1911)	50, 72 *
Coll. of P and S., Little Rock	(1908) 59; (1911)	46
College of Physicians and Surgeons, Chicago	(1890)	70 *
Illinois Medical College	(1910)	46
Keokuk Med. College, Coll. of P. and S.	(1903)	59
Louisville Medical College	(1880)	70 *
Ensworth Medical College	(1911)	71 *
Missouri Medical College	(1886)	45
Leonard Medical School	(1911)	69
University of Oklahoma	(1911)	67, 76 *
Tennessee Medical College	(1905)	66
Meharry Medical College	(1907) 69; (1911)	67, 74 *
Memphis Hospital Medical College	(1911)	77 *
University of West Tennessee	(1910) 68; (1911)	70*

* Fell below 50 per cent. in one or more branches.

Oregon July Report

Dr. E. B. McDaniel, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 5-7, 1911. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 96, of whom 65 passed, including 13 osteopaths and 31 failed, including 5 osteopaths. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Gross Medical College	(1901)	82.9
Denver and Gross College of Medicine	(1908)	78.2
George Washington University	(1908)	76.4
Northwestern University Medical School.	(1892)	70.4;† (1893) 81.2; (1900) 71.6;† (1906) 79.6; (1908) 76.1, 86.8; (1909) 92.
College of Physicians and Surgeons, Chicago.	(1891)	78.6; (1897) 76.2.
Jenner Medical College	(1898)	*
Hahnemann Medical College and Hospital, Chicago.	(1895)	77.5; (1910) 80.5.
Rush Medical College	(1909) 83.3; (1911)	85
University of Iowa, College of Medicine	(1910)	79.9
College of Physicians and Surgeons, Kansas City.	(1904)	80.4
Johns Hopkins University	(1911)	89.2
Harvard Medical School	(1904)	90.8
Tufts College Medical School	(1901)	75.9
University of Michigan, Dept. of Med. and Surg.	(1909)	82.4
Barnes Medical College	(1911)	79.7
Creighton Medical College	(1896)	76
Columbia University, College of Physicians and Surgeons,	(1885)	73.5;† (1898) 86.2.
Ohio Medical University	(1904) 75.2; (1906)	79.4, 83.3
Pulte Medical College	(1888)	68.7†
University of Oregon,	(1909) 84.2; (1910) 76.2; (1911)	75.3, 76.4, 77.9, 79.1, 80.8, 81.2, 83.4, 84.6, 85.6.
Willamette University	(1911)	83.8
Hahnemann Medical Coll. and Hosp., Philadelphia.	(1903)	78.1
University of Pennsylvania	(1906)	84.2
Jefferson Medical College	(1901) 83.3; (1910)	84.7
University of Vermont	(1907)	81.3
McGill University, Quebec	(1897)	77.4
University of Turin, Italy	(1899)	71.6†
Nongraduates		78.6, 80

FAILED

Hahnemann Medical College and Hospital, Chicago.	(1904)	72.2
Rush Medical College	(1903)	69.3
Chicago College of Medicine and Surgery	(1900)	61.2
Western Eclectic College of Medicine and Surgery.	(1908)	58.6
Kentucky School of Medicine	(1903) 72.8; (1907)	67.8
University of Louisville	(1907) 73.8; (1910)	71.5
Minneapolis College of Physicians and Surgeons.	(1901)	67.3
St. Louis University	(1905)	59.5
Ensworth Medical College	(1908)	49.3
Barnes Medical College	(1904)	65.8
Kansas City Medical College	(1905)	70.9
Syracuse University	(1908)	73.5
Starling-Ohio Medical College	(1911)	73.5
Ohio Medical University	(1906)	60
Pulte Medical College	(1894)	67.2
Starling Medical College	(1891)	49.3
University of Oregon	(1910) 71.2; (1911)	69, 72
Queen's University, Kingston, Ontario	(1910)	62.2
Nongraduates	56,1, 6.5,	67.4, 71.2

* No grade given.
† Five points allowed 10 years of active practice.

Book Notices

AN ATTEMPT TO CORRECT SOME OF THE MISSTATEMENTS MADE BY SIR VICTOR HORSLEY, F.R.S., F.R.C.S., AND MARY D. STURGE, M.D., IN THEIR CRITICISMS OF THE GALTON LABORATORY MEMOIR: A FIRST STUDY OF THE INFLUENCE OF PARENTAL ALCOHOLISM, Inrc. By Karl Pearson, F.R.S. Questions of the Day and of the Fray. No. III. Department of Applied Mathematics, University College, London. Paper. Price, 1 shilling net. Pp. 42. London: Dulau & Co., 37 Soho Square, W., 1911.

Last year there appeared, issued from the Eugenics Laboratory, London University, a pamphlet by Professor Karl Pearson, entitled "The Influence of Parental Alcoholism on the Physique and Ability of the Offspring." The conclusion reached and specially emphasized by the author was that there was no such influence. Naturally this would be taken up and made the most of by the advocates of the liquor interests and it excited a rather sharp controversy in the medical journals and in the lay press. The present pamphlet is described as an attempt to reply to certain criticisms in an article in the *British Medical Journal* by Sir Victor Horsley, the well-known British surgeon, and Dr. Mary D. Sturge. Sir Victor Horsley and Dr. Sturge have, according to the showing of this pamphlet, misapprehended some of Professor Pearson's views and statements, as is natural in controversies of this nature. His reply to one or two of their criticisms, however, seems to us not altogether conclusive. At least there is a margin left for doubt as to the value of his methods and their results. His idea in the study was to ascertain whether the alcoholism of the parents had a marked influence on the mentality and physique of the offspring as children, as is stated in the pamphlet. By "offspring" he evidently meant only the children under the age of puberty, but did not specifically state that, probably assuming that it would be readily understood. The charge of Sir Victor Horsley of indefiniteness in the use of the term "offspring" is at least partly justifiable. Professor Pearson's distinction between sober and drinking parents also seems to us an indefinite one. By "sober" he says is not meant totally abstaining. It is applied here to cases in which the use of alcohol "is so moderate, if it exists, that it does not appear to interfere with the health of the individual or the welfare of the home." There are many men who use alcohol to what might properly be called excess and ultimately to their own disaster without showing it in their general appearance or even in the condition of their families. It is the observation of some medical men that their children are liable to suffer in the long run from such parental habits though they may not show it for a long time. Professor Pearson insists on a graded effect of alcohol which we may admit, but there is also a graded idiosyncrasy which is not always directly parallel with its apparent effects. A classification made by officials, or by lay observers generally, on the basis here indicated would not seem to us a very good basis for statistics. In fact one might take cases of parental insanity which, whatever one's theories or heredity may be, is practically hereditary in a very large proportion of cases, and get very similar results to those obtained by Professor Pearson. Comparatively few of the children of insane parents show their heredity before the age of puberty. There is no evidence in the pamphlet before us (we have not seen the original paper) that any attempt was made to estimate stigmata or other mental or physical evidences of degeneracy so far as they could be detected in the immature children of alcoholic parents. Professor Pearson himself admits the possibility of a direct heredity of alcoholism and presumably of other forms of degeneracy in the children of inebriates after the stress of puberty has passed. His line of investigation, it seems to us, was practically defective and the results therefore cannot be considered of great value. He admits a 20 per cent. higher death-rate in the children of alcoholic parents over those of sober parents. But this he accounts for largely by the accidents and unfavorable home environment to which they are subjected by the drinking habits of their parents, which deduction of course may be correct. It is something in the line of Dr. Archdall Reid's contention that alcoholism improves a population by weeding out its degenerates. A large part of the

pamphlet is taken up with the discussion of the question of wages as showing that there is no very great difference between the wage-earning capacity of the drinking and the sober workman, but nothing is said about what seems to us one of the most important factors, the equalizing tendency of the trades unions. As to the temper of the attempt to reply to the criticisms, it certainly is open to the charge of being unjudicial, and the reference to authorities is not always happy. We do not know what sort of authority Stöcker is, but his ability to find epilepsy or insanity as an antecedent to nearly all his eighty-nine cases of extreme alcoholism seems a little remarkable. Demme, whom he also quotes, is not a very recent authority and his ideas at the time he wrote in regard to the effects of alcohol on the efficiency of workers as indicated in the quotation given are not in accordance with the best modern medical opinion on the subject. We doubt also whether Crothers, for that is what we take "Chroters" to mean, would entirely agree with Professor Pearson's views.

If the Eugenics Laboratory is to devote its studies to such questions it is to be regretted. Professor Pearson may, as he says, have been entirely without bias at the beginning of his study but that is evidently not his mental attitude at the present time. He is an expert in the handling of statistics, but he does not appear to us always successful in the estimation of the value of the data on which they are based.

JOINT TUBERCULOSIS. By Leonard W. Ely, M.D., Consulting Orthopedist to the County Hospital, Denver. Cloth. Price, $2.50 net. Pp. 243, with 72 illustrations. New York: William Wood & Co., 1911.

As the author correctly states in his preface, "The time seemed ripe for a review of more recent knowledge of the subject, inasmuch as the views held were so conflicting that further pathologic study was required." In order to accomplish this, he studied a large number of microscopic specimens from cases, and the results from various modes of treatment. The section on pathology has much to commend it, and is as thorough as one could wish it. His view "that the trend of modern opinion is away from heredity and toward infection from without in cases of tuberculosis" is one generally accepted. The pathologic studies represent much painstaking labor, and are greatly helped by a large number of excellent microphotographs. The only criticism to be offered is that the descriptions of the photographs are often insufficient. Some radiographs are so poorly reproduced that it would have been better to omit them. Especially is this true of Part I, and, for example, Figure 34.

It is to be greatly regretted that so little reference has been made to the value of the fresh-air treatment and seacoast sojourns.

The second part is devoted to the discussion of tuberculosis of the individual joints. It would have been much more satisfactory to limit the subject of general discussion in Part I, and to elaborate the diagnosis and differential diagnosis of tuberculosis of individual joints, which latter is discussed in a rather incomplete manner.

About forty pages of the book are devoted to histories, which, although they represent much painstaking labor, are of comparatively little value in a book of this kind. The illustrations in general are clear. The volume may be regarded as one of the best in this field of surgery.

LEHRBUCH DER AUGENHEILKUNDE IN DER FORM KLINISCHER BESPRECHUNGEN. Von Dr. Paul Römer, o.ö. Professor der Augenheilkunde, Direktor der Universitäts-Augenklinik zu Greifswald. Paper. Price, 22 marks. Pp. 1,028, with 209 illustrations. Berlin: Urban & Schwarzenberg (New York: Rebman Company), 1911.

The student of ophthalmic science cannot complain nowadays of a paucity of either domestic or foreign text-books, compendiums, treatises and monographs on the eye and its diseases. While for Americans practicing in America the products of the domestic pen are far more likely to be of practical value than any foreign manual, however well written, the clearly expressed words of the professor of ophthalmology at Greiswald should not be forgotten when a German authority is to be consulted.

The familiar form which these teachings take—that of talks to a class—are at least pleasant reading and one soon feels that one is under the spell of a competent teacher, investigator and thinker. Römer is probably best known to us as an experimenter and investigator in the realms of applied therapeutics—easily the weakest side of German ophthalmology—and we are not disappointed, especially while reading the chapters on treatment, to find that Römer deals more extensively and intelligently with most eye diseases (as we see them) than does the average compiler or writer of German text-books. The various diseases of the eyelids, conjunctiva and cornea are considered at as great length as the limitations of a schoolbook permit, while the bacteriology of the eye has received even more attention than is commonly given to it in works of this sort. Quite naturally, the treatment of trachoma is completely considered by a man who was probably the first to show us how jequirity could be effectively and safely administered in this serious and intractable disease.

For some occult reason the methods employed in teaching refraction to students, both undergraduate and postgraduate, in German universities are such as cannot be regarded as adequate for American physicians; even our clinic patients demand and usually receive more careful attention to their refractive errors and muscular anomalies than is expended on the corresponding class in Germany. This defect, as we regard it, is reflected in most German treatises, which would, indeed, be false guides for American practice. Römer's lectures form no exception to the rule, the subject of "glass-fitting" being dismissed in the usual light and airy fashion through the reading of a few pages of print.

On the other hand, we are well pleased with the manner in which the neurology of the ocular apparatus is taught and by the discussion of migratory ophthalmia. These and many other subjects are fully and intelligently dwelt on.

The illustrations, colored as well as black and white, are not up to the average; most of the former are useless and many of the latter inadequate to furnish any practical idea to the reader. Some errors in proof-reading are noticed; for instance, Landolt and Weeks are transformed into "Landoll" and "Week."

DIE MASSENVERHÄLTNISSE DES HERZENS UNTER PATHOLOGISCHEN ZUSTÄNDEN. Pathologisch-Anatomische Untersuchungen. Von Sofus Widerøe. Paper. Pp. 143, with illustrations. Christiania: Jacob Dybwad, 1911.

Numerous studies have been made of the size of the heart under normal and pathologic conditions. The difficulties in the way of obtaining accurate results are great, and many of the methods are faulty. Failure to take into consideration the amount of surrounding fat, or the stumps of large vessels may be cited as instances of these inaccurate methods. Widerøe has tried to overcome the objections to these various methods and by following out his own, which is modeled on that of W. Mueller, he has reached results that he regards as fairly trustworthy. His tables show a careful study of the age of the patient, the height, weight, chest measure; with details as to the heart, such as weight as a whole, weight and measurements of the various parts such as ventricles, auricles, septum ventriculorum, etc. The diseases with which the patients were affected are known and there is a consideration of the size in relation to the pathologic conditions. The monograph is a real contribution to our knowledge of this subject and should be consulted by one interested in this topic. There is a good bibliographic index, with numerous references to the literature scattered throughout the text.

THE HEALTHFUL ART OF DANCING. By Luther H. Gulick, M.D. Author of "The Efficient Life," etc. Cloth. Price, $1.40 net. Pp. 273, with illustrations. New York: Doubleday, Page & Co., 1910

Dancing is such a popular recreation that there seems little need for a book advocating it, unless it be a plea for its rational use. This is what Dr. Gulick has made. He explains the inborn appreciation of rhythm, and his contribution ought to help to remove some of the evils which have been grafted on to this form of recreation. The folk dances which mean so much in European life and which are being revived throughout the United States with wholesome effect are explained and portrayed, adding greatly to the interest of the book.

HANDBOOK OF THE TREES OF THE NORTHERN STATES AND CANADA EAST OF THE ROCKY MOUNTAINS. By Romeyn B. Hough, B.A., Author of "American Woods." Cloth. Price, $6. Pp. 470, with illustrations. Lowville, N. Y.: R. B. Hough, 1907.

This book will be of value to those who wish to identify the trees of this country, and all lovers of Nature will appreciate it. For each tree there is a full-page picture of the leaves, with either the flower or the fruit, or both, while the opposite page, which contains a general description of the tree, shows also the trunk, a cross-section of the wood and distribution of the species, indicated on a map of the United States. The pictures are excellent and give evidence of much painstaking work in their preparation. The preface gives a glimpse into this labor of the author when he speaks of the difficulty he had some years in finding the flowers of certain trees; it seemed that there were no blossoms that year and the author traveled far in his search. The book also contains a synopsis of the families and genera represented, with analytical keys to enable one to find the species. A glossary and a good index add to the value of the book.

KURZGEFASSTE CHIRURGISCHE OPERATIONSLEHRE (OPERATIONSKURS). Für Studierende und Aerzte. Von. Ad. Oberst, Assistent an der Chirurg. Klinik und Privatdozent für Chirurgie an der Universität Freiburg i. Br. Paper. Price, 7 marks. Pp. 198, with 232 illustrations. Berlin: S. Karger, 1911.

The only criticism which can be made on this, one of the newer German books on operative surgery, is that the subject has grown to be too large to be covered in as few pages as is attempted in this work. In its favor, however, are its illustrations, especially those which are intended to help elucidate the little details of technic, which are not ordinarily shown, are very clear and well reproduced. Throughout the book only the essentials of each operation are given. An excellent description of the osteoplastic method of amputation, according to Bier, is one rarely seen in the newer books on this subject. It can be recommended as a book for beginners.

TUBERCULOSIS AS A DISEASE OF THE MASSES AND HOW TO COMBAT IT. Seventh American Edition. Prize Essay by S. Adolphus Knopf, M.D., New York, Professor of Phthisio-Therapy at the New York Post-Graduate Medical School and Hospital. (International Prize Awarded by Committee of the International Congress to Combat Tuberculosis as a Disease of the Masses, at Berlin, July 31, 1900.) Paper. Price, 25 cents. Cloth. Price, 50 cents. Pp. 122, with 64 illustrations. New York: The Survey, 105 E. Twenty-Second Street (1911).

The new edition of this essay is considerably enlarged and improved, and will doubtless prove as useful in the future as the other editions have in the past. The changes are chiefly in the application of the outdoor methods to sleeping facilities and the expansion of the outdoor school. A new chapter on school hygiene is introduced.

ALCOHOLIC FERMENTATION. By Arthur Harden, Ph.D., D.Sc., F.R.A., Head of the Biochemical Department, Lister Institute, Chelsea. Cloth. Price, $1.25 net. Pp. 128, with illustrations. New York: Longmans, Green & Co., 1911.

This is another one of the valuable monographs on biochemistry written by specialists in their respective lines and edited by R. H. Aders Plimmer and F. G. Hopkins. It gives one extreme pleasure to find this subject of such general interest and extreme importance covered in so concise and yet in so comprehensive a way. The work is made especially valuable in that it gives a very good bibliography, and in that it is a very complete review of the exhaustive work of Harden and Young on alcoholic fermentation.

YELLOW FEVER AND ITS PREVENTION. A Manual for Medical Students and Practitioners. By Sir Rubert W. Boyce, M.B., F.R.S., Holt Professor of Pathology, University of Liverpool. Cloth. Price, $3.50 net. Pp. 380, with 61 illustrations. New York: E. P. Dutton & Co., 1911.

This is a thorough work by an author who has had a wide experience in connection with the epidemics of yellow fever in the West Indies, in New Orleans and on the west coast of Africa. The history of the disease in these various regions is first considered, then follows a treatise on the symptomatology, diagnosis, pathology and prophylaxis of the disease. The book is well illustrated and will be welcome to sanitarians, especially those who are interested in tropical medicine.

Medicolegal

Revocation of License for Fraudulent Advertising as Unprofessional Conduct—Construction and Validity of Statute

(Aiton vs. Board of Medical Examiners of Arizona, 114 Pac. R. 962.)

The Supreme Court of Arizona affirms a judgment of the District Court sustaining a demurrer to a petition for a writ of certiorari to review the proceedings of the board which resulted in the license of the petitioner to practice medicine in that territory being revoked [i. e., the license remains revoked]. The revocation was after due notice and a hearing, based on an affidavit filed with the board, charging the petitioner with having been guilty, since the license was issued to him, of unprofessional conduct rendering him unfit to practice medicine in the territory, in that he wilfully and knowingly published in a newspaper an advertisement of remarkable cures claimed to have been accomplished by means of certain mineral waters and preparations used and controlled by him, and claiming that such waters and preparations would cure incipient tuberculosis, systemic catarrh, catarrh of the head, Bright's disease, diabetes, rheumatism and numerous other diseases. The advertisement was set forth in full in the affidavit, and it was charged that the publication was made for the purpose of soliciting and procuring wrongfully and fraudulently patients to submit themselves to medical treatment by him; that certain of the statements contained in the advertisement were false, and were known to the petitioner to be false when he made them, and were published with the intent to deceive the public and to impose on the credulous and ignorant.

The question presented by this appeal was the validity of the provision in the statute that: "Upon proper proof to the Board of Medical Examiners of Arizona that the holder of any license issued under the provisions of this act has been guilty, since the issuance thereof, of any grossly immoral or unprofessional conduct rendering him or her unfit to practice medicine in this territory, or has been convicted of any felony, said board shall, after due notice to such holder and full opportunity to him or her to defend against or refute such charges, revoke and cancel such license. . . ." It was contended that the statute, since it does not declare what shall be considered unprofessional conduct, is void for uncertainty. It was argued that "the term 'unprofessional conduct' is so vague and indefinite that no one can be certain just what it embraces. It might be declared to include a breach of professional ethics, irrespective of any moral turpitude, and might be declared to include acts of so trivial a nature and of so little importance as to wholly preclude any of the elements of a crime."

The petitioner attempted to distinguish certain cases which hold valid statutes conferring on boards power to revoke the licenses of those found guilty of immoral conduct from this on the ground that the term "immoral conduct," while in a measure indefinite, "contains an element of moral turpitude or disregard of the settled ideas or principles of morality, and are very easily recognized, by reason of their being a breach of what we all know to constitute moral conduct," but that "unprofessional conduct does not consist simply of breaches of moral conduct, does not necessarily include moral turpitude, and might consist of anything temporarily frowned on by any board of physicians temporarily in power." His position finds support in decisions by the Supreme Courts of Kentucky and California and the Court of Appeals of the District of Columbia.

But this court cannot agree that the meaning to be given the term "unprofessional conduct," as used in this statute, is that suggested. It thinks it should be held to mean that which is by general opinion considered to be grossly unprofessional because immoral or dishonorable. This court cannot perceive that the petitioner's interpretation is tenable or could have been contemplated by the legislature when the language employed and the purpose of the legislation is considered. "Grossly immoral and unprofessional conduct" excludes the idea that a license may be revoked for trivial reasons or for a violation of what might be regarded as mere professional ethics.

Giving the words the construction this court does, the question of the validity of the statute is foreclosed by the decision of the Supreme Court of the United States. In Meffert vs. State Board of Medical Registration & Examination et al., 66 Kan. 710, the action of a board in revoking a license of a physician was upheld under a statute giving it the power to revoke the license of one guilty of gross immorality. On an appeal to the Supreme Court of the United States, the judgment was affirmed without discussion. Meffert vs. Packer, 195 U. S. 625. In that case the statute does not define what shall be considered gross immorality. Its ascertainment if left to the common judgment as to what is grossly immoral, as the Arizona statute leaves grossly unprofessional conduct to be ascertained. See, also, State vs. Board, 34 Minn. 391.

It is too well settled to admit of discussion that the state, in its exercise of the police power, may prescribe the qualifications of those who are permitted to practice medicine, and may commit to a board created by it the authority to ascertain whether an applicant for permission to practice possesses the requisite qualifications, and also the power, after notice and opportunity to be heard, to revoke the license of any who become disqualified either morally or intellectually.

Communications to Physicians Sent to Make Reports Not Privileged

(Chicago, Indianapolis & Louisville Railway Co. vs. Gorman (Ind. App.), 94 N. E. R. 730.)

The Appellate Court of Indiana, Division No. 2, holds that in an action against a railway company for personal injuries communications made to a physician or surgeon who was sent merely to make an examination and report on it are not privileged. The court says that the evidence disclosed that the witness was a surgeon of the railway company at the time of the injury; that he told the injured man (plaintiff) that he was requested by the station agent to visit him, and make an examination so that he could make the ordinary report as surgeons are required to make to the company in cases of that kind; that he was there for the purpose of making an examination as the physician of the railway company to make his report to the railway company, and that he did make an examination as such physician of the said company, but that he did not prescribe for the plaintiff, and had nothing to do with the case as to treatment. In other words, it was evident that his visit was purely on a business matter, and not in a professional capacity, and that the plaintiff so understood the purpose of his call. Under such circumstances there were no privileges protecting a statement made to him by the plaintiff, such as that he heard the train coming, but thought he had time to get over.

Parents Not Liable for Medical Services Rendered to Emancipated Children

(Brosius vs. Barker (Mo. App.), 136 S. W. R. 18.)

The Springfield (Mo.) Court of Appeals affirms a judgment for the defendant in this suit of a physician to recover from a father for medical services rendered to his son, about 20 years of age, in a distant state. The son had left his father's home in Missouri and gone to Oregon, where he was taken sick with typhoid fever, and, because he claimed to be without money, the plaintiff, a physician, sent him to a hospital and assumed the charges due the institution for the care of the patient. The father, in answer to a letter notifying him that his boy was there sick, wrote to the superintendent of the hospital, saying. "I have a dear boy in your institution sick with fever. I have sent him some money and will send more soon. You will give him all the attention you can and greatly oblige a father so far away, and kindly let me know from time to time how he is getting along."

The father's defense to the plaintiff's suit for his own services and the balance of account due the hospital, which had been assigned to him, was that he had previously emancipated his son and was not liable for his care. The court thinks that the evidence was sufficient to require a submission to the jury of the defense of emancipation, and holds that, as they found for the father thereon, the further question of whether the father should pay the plaintiff for the services he and those associated with him rendered in caring for his son while he was sick and perhaps would have perished had such services not been rendered, must be left to the interior forum, as the tribunal of conscience has well been called.

The plaintiff, the court says, knew at the time the defendant's son applied to him for assistance that the boy was not living with his father. He was informed that the father lived in Missouri and therefore it seems to the court that the arrangement between the father and son under which the boy had left home was a matter that the plaintiff should have inquired into before rendering the services to the boy on the credit of the father. He must have known that sometimes children who have good homes and are supplied with all the necessaries and the luxuries of life become dissatisfied, and without any reason or excuse leave home, and that under such circumstances it would be unjust to hold the parent liable on any contracts made by the minor. It was not necessary that the plaintiff should have had actual knowledge that an arrangement existed between the father and son under which the father was released from liability.

Nor does the court consider that the defendant was rendered liable by his letter, as there was nothing in the letter agreeing to pay for the services rendered, and when it was written a contract existed between the plaintiff and the son relating to the services sued for in this case, and there was no evidence that the letter in any wise changed the relation of the parties or the terms of the contract under which the boy was then being treated, or that any additional attention was given the boy on account thereof. On the contrary, the statement is found to the effect that some money had been sent to the boy and more would be forwarded. If the father intended to legally bind himself for the payment of the plaintiff's bill, he did not so state.

Admissible Evidence of Illegally Prescribing Cocain

(Stanley vs. State (Ga.), 70 S. E. R. 894.)

The Court of Appeals of Georgia affirms a judgment convicting the appellant Stanley of illegally prescribing cocain. The court says that the act on which the indictment was framed makes it a penal offense for any practitioner of medicine to furnish to or prescribe for the use of any habitual user of the same any of the narcotic drugs therein mentioned, unless the person for whom the drug is furnished or prescribed is under his professional care and such drug is deemed necessary for his proper treatment. In other words, the statute makes the controlling question one of good faith on the part of the practitioner of medicine in furnishing or prescribing the drug; the issue being whether he does so in good faith to a patient, or whether the prescription is made for the purpose of evading the provisions of the act. The accused in this case contended in his defense that the habitual user of the narcotic drug in question was a patient of his and under his treatment, and that he prescribed cocain for her because he deemed it necessary for her proper treatment. The state contended that the act was not in good faith, but was done for the purpose of evading the provisions of the statute. Any testimony that would tend to illustrate this issue would be admissible in evidence, and testimony that the accused made other prescriptions of a similar character, for many different persons, was admissible in evidence for the purpose of establishing the criminal intent.

Admissibility in Evidence of Record Cards

(Douler vs. Prudential Insurance Co. (N. Y.), 128 N. Y. S. 396.)

The Second Appellate Division of the Supreme Court of New York says that this was an action on an insurance policy on the life of one Margaret Douler, who died of pulmonary tuberculosis in December, 1909. The application for the policy was made July 22, 1909, and the company undertook to prove that at that time, and for a considerable period before, the insured was suffering from pulmonary tuberculosis and knew it. In the attempt to prove that defense, the company called as a witness a physician who was in 1908 in attendance at a public dispensary, in which capacity he had made certain entries on a record card, which contained answers to questions

put by him to a woman patient who had given the name of Margaret Douler. He had made certain entries on the card when the patient called at the clinic at various times in October, 1908, and he swore that these entries were true when made, although he no longer had any personal recollection of the matters so entered. The company offered the card in evidence, but the evidence was rejected on the ground that there was not sufficient proof of identity between the insured and the patient, and on the further ground that the record card was not competent evidence, even if identity be assumed. A similar question arose as to the introduction of another record card, kept by a witness who was a nurse in the employment of the board of health, relating to the case of a patient known as "Margaret Douler." That card was likewise excluded when offered in evidence. The court holds that the rejection of these cards was reversible error. As to the identity of the patient at the clinic with the person insured in the policy, similarity of name made a *prima facie* case of identity, according to long-established rules of law. And while these record cards were not competent evidence of their contents simply as records, yet where it was shown that the entries thereon were made by the witness at the time of the happenings described as taking place in his presence, and were honestly made by him, such entries might be admissible where the witness had ceased to have any personal recollection of the facts in question. There was also other testimony offered and received to show that the insured had pulmonary tuberculosis for some time prior to the application for the policy, and the exclusion of the record cards deprived that evidence of some corroboration, and was therefore not harmless.

Validity of Act Making Unlawful Possession of Opium, Etc.

(*Ex Parte Yun Quong* (*Cal.*), *114 Pac. R.* 835.)

The Supreme Court of California in this case holds constitutional the statute of that state which makes it unlawful for any person to have in his possession any cocain, opium, morphin, etc., or any preparation thereof containing more than 2 grains to the fluid ounce, except on the written order or prescription of a physician, dentist or veterinary surgeon licensed to practice in the state, or unless such possession is that of a jobber, wholesaler, manufacturer to pharmacies, retail pharmacy, physician, dentist or surgeon licensed to practice in the state.

Yun Quong had been arrested for having in his possession a certain preparation of opium prohibited by the act, and attacked the validity of the law, insisting that opium is property and that the act making the mere possession of it a crime is an infringement on the rights of liberty and property. But the court declares that if the belief that the use of opium, once begun, almost inevitably leads to excess may be entertained by reasonable men—and the court does not doubt it may—such belief affords a sufficient justification for applying to opium restrictions which might be unduly burdensome in the case of other substances, as, for example, intoxicating liquors, the use of which may fairly be regarded as less dangerous to the users or to the public. Assuming, as the court must, that the legislature acted on some such view, the restrictions on the right to possess the drugs named in the act cannot be said to be clearly unreasonable or unnecessary for the protection of the public from the evils against which the legislation in question is aimed.

Provision for Physician on Jury in Lunacy Inquests not Unconstitutional

(*State vs. Linderholm* (*Kan.*), *114 Pac. R.* 857.)

The Supreme Court of Kansas holds that the statute of that state providing for a jury, in lunacy inquests, of four persons, one of whom must be a physician, does not violate the right to a jury trial which is guaranteed by the Constitution. The court says that although the hearing of a case of this kind is ordinarily designated as a "trial," it is not so in the sense of the Constitution. The proceeding is merely an inquest, conducted primarily for the benefit of the person whose mental state is in question, and it bears no resemblance to an action, either civil or criminal.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Journal of Missouri State Medical Association, St. Louis

August

1 The Missouri Association for the Relief and Control of Tuberculosis. G. Homan, St. Louis.
2 *Diagnostic Significance of Abdominal Pain. R. M. Funkhouser, St. Louis.
3 *Death of the Fetus in Utero. R. S. Tilles, St. Louis.
4 *Recent Studies in Eclampsia. G. C. Mosher, Kansas City, Mo.
5 *Improved Gravity Apparatus for Intravenous Injection of Salvarsan. J. L. Boehm, St. Louis.
6 Case of Ruptured Ectopic Gestation, Followed by Acute Gastric Dilatation and Paralytic Ileus, Transfusion, Gastric Lavage, Recovery. W. R. Hewitt, St. Louis.
7 Eclampsia. M. Dillon, Fairfield, Mo.
8 Thyroid and Parathyroid Glands. C. Geiger, St. Joseph, Mo.

2. **Abdominal Pain.**—The conclusions deduced by Funkhouser from the study of abdominal pain are: To bear in mind that pain in itself does not tell the whole story, but merely puts the physician and patient on their guard. That there is grave danger following the administration of narcotics which have a great tendency to mask the true condition. That pain is not infallible as to the site of disease. That the initial pain is, in many cases more important than the subsequent diffuse pain that follows. That it is the duty of the physician to educate his clientele relative to abdominal pain, especially should it be the province of that type of medical man, the family physician, who is rapidly disappearing, *triste dictu*, to inform the laity of the significance and the danger of the neglect of abdominal pain.

3. **Death of Fetus in Utero.**—For the determination of fetal death there are, Tilles says, the signs first noticed by the mother, then those observed by the obstetrician both as concerns the mother and the state of the fetus. Observations and sensations on the part of the mother are an absence of fetal movements, heaviness and coldness in the lower abdomen, the feeling of a foreign body in the abdominal cavity, which changes positions with the maternal movements; also a general feeling of coldness or real chills may occur, the breasts are noticed to become smaller, the gradual abdominal enlargement ceases to be noted and becomes stationary or sinks, due to lack of tonicity of the uterus and lacking the resistance of the fetal parts; there is a vague feeling of malaise and languidness characterized by loss of appetite, feeling of lumbago or fatigue, with possibly, in women of delicate nature, a slight evening elevation of temperature. On the part of the obstetrician is noted the absence of fetal heart sounds established after repeated trials, an unusual flabbiness of the uterus instead of the normal resiliency and compressibility, absence of uterine contractions, a possible discharge of meconium, fetid discharges, or flatus from the uterus. Vaginal examination reveals little, as after maceration has occurred the small parts are difficult to feel. The uterus may be hard to differentiate from an abdominal cystic tumor. Knapp claims to have found acetone in the urine, but it has not been confirmed by later experiments. When the cervix admits a finger the relaxed and overlapping condition of the fetal skull bones may be palpated. The effect on the mother is practically *nil* with the exception of the few clinical symptoms mentioned above, unless the fetus undergoes putrefaction with absorption of small parts, the bones then by ulcerative processes attempting to be discharged through the bladder, vagina or rectum, or externally through the abdominal wall.

4. **Eclampsia.**—The treatment employed by Mosher looks to early evacuation of the uterus, as the ovum or fetus is the source of the toxins and statistics show lower mortality after labor. He says that preliminary to delivery, it is best to avoid the use of chloroform during the convulsions; puncture should be made of the membranes to hasten spontaneous dilation and also to lower blood-pressure. Inject veratrum, 15 to 20 drops of the fluid extract, hypodermically and give an enema of warm milk with 40 to 60 grains of chloral. On the base of the tongue place two drops of croton oil. Better,

if it can be done, wash out the stomach and inject through the tube 2 ounces of castor oil with 2 drops of croton oil. Sweating should be induced by hot packs or sweat cabinet for thirty minutes, using ice to the head while heat is applied to the body. A pint of normal salt solution should be injected subcutaneously, or several quarts may, in the emergency, be thrown into the bowel. This sweat and salt injection is to be alternated every hour, provided there is an equillibrium kept between solution injected and sweating. Nitroglycerin if convulsions recur. If patient can swallow she should be given concentrated salts, a dessertspoonful dose every fifteen minutes until catharsis follows. Cups, venesection or leeches may be used if congestion of chest, cyanosed face or sterterous breathing occurs. If medical means fail, manual dilation by Harris' method, followed by forceps or version, are to be considered in each individual case.

5. Abstracted in THE JOURNAL, March 11, 1911, p. 732.

Boston Medical and Surgical Journal

August 24

9 Importance of Determining the Causes of Inebriety. B. T. Burley, Worcester, Mass.
10 Wertheim's Method for Removal of Cancer Originating in the Uterine Cervix. H. T. Hutchins, Boston.
11 Suggestion in Medical Practice. G. G. Fernald, Concord, Mass.
12 Sixty Cases of Syphilis Treated with Salvarsan. J. H. Cunningham, Boston.

Chicago Medical Recorder

August 15

13 Vesico-Vaginal Fistula. C. J. Drueck, Chicago.
14 Action of Moderate Continued Force on Cicatricial Tissue. C. S. Case, Chicago.

Denver Medical Times and Utah Medical Journal

August

15 *Gastrectasia. J. K. Miller, Greeley, Colo.
16 Mercury vs. Salvarsan. J. Cunco, Denver.
17 Electrotherapeutics. F. E. Clark, Logan, Utah.

15. **Gastrectasia.**—The most satisfactory treatment of gastrectasia in Miller's opinion is massage. He has used machine massage for nearly six years. It has proven efficient in more than forty cases. Miller has not had a complete failure, and in two cases only was the result but partial. Both the partial cures were tuberculosis patients. Few cases need more than a three-month period to be cured, and so far as Miller has been able to follow his cases the results are permanent. One patient was treated five months before all subjective symptoms disappeared. Miller had occasion to examine the patient a few weeks ago and found him remaining well. Twenty months have passed since his treatment. When treatment began, the lower curvature was almost two finger-widths below the navel, when discharged the curvature was three finger-widths above. The course given consists of daily treatments of five to seven minutes each for the first month, three treatments per week for the second month, and one or two treatments per week for the remaining four weeks. Miller requires all patients to remain the ninety days under treatment, and few less responsive cases a longer time. A rigid dietary is carried out and is regarded a part of the treatment. When the stomach is ptosed, the vibratory treatment will not restore it, though in some cases decided improvement has been noted. The displaced stomach must be otherwise cared for. Miller uses either the Spivak bandage or the moleskin adhesive apron belt.

Bulletin of Johns Hopkins Hospital, Baltimore

September

18 Zabdiel Boylston, Inoculator, and the Epidemic of Small-Pox in Boston in 1721. R. H. Fitz, Boston.
19 Henry Newell Martin. H. Sewall, Denver.
20 Medical Notes on the Divine Comedy of Dante Alighieri. P. H. Dernehl, Milwaukee, Wis.
21 Molière and the Physician. M. Kahn, New York.
22 Art as Applied to Medicine. M. Brödel.

Journal of Arkansas Medical Society, Little Rock

July

23 State Medicine and Public Hygiene. S. Cooper, Fort Smith.
24 Sanatoria and Hospitals for Tuberculosis. J. S. Shibley, Booneville, Ark.
25 Benjamin Rush and Others on Consumption. J. T. Clegg, Siloam Springs.
26 Needs of the Hour in Controlling Tuberculosis. J. D. Southard, Fort Smith.

New York State Journal of Medicine, New York

August

27 *Exophthalmos, a Common Symptom of Chronic Bright's Disease. H. C. Gordinier, Troy, N. Y.
28 Deaths of Athletes and Fatalities in Athletic Games During the Year 1910. R. E. Coughlin, Brooklyn.
29 *Paralysis of the Upper Extremity Due to Nerve Injuries. N. Jacobson, Syracuse, N. Y.
30 Acute Unilateral Hematogenous Septic Infection of Kidney. A. T. Bristow, Brooklyn, N. Y.
31 Extragenital Chancre. F. J. Resseguie, Saratoga Springs, N. Y.
32 *Hydrotherapeutic Treatment of Chronic Disease of the Heart. J. M. Swan, Watkins, N. Y.
33 Taking Cure at Carlsbad. H. G. Watson, New York.
34 Common Sense in Rearing of Children. C. A. Frost, Utica, N. Y.
35 Recording Blood-Pressure in General Narcosis; Observations on Grams of Agent to Kilos of Body Weight. W. C. Woolsey, Brooklyn.
36 *Two Cases of Heroin Habituation. H. Brooks and H. R. Mixell, New York.
37 Secret Division of Fees. R. T. Morris, New York.
38 Mutual Helpfulness in Conservation of Public Health. W. A. Howe, Phelps, N. Y.
39 Gangrenous Appendicitis Secondary to Puerperal Septicemia. C. C. Zacharie, White Plains, N. Y.

27 and 32. Abstracted in THE JOURNAL, May 20, 1911, pp. 1505 and 1506.

29. **Paralysis of Upper Extremity.**—Jacobson illustrates some usual and unusual conditions encountered by presenting the histories of a few cases. I. Fracture of humerus with angulation; nerve not apparently damaged, but adherent to callus for distance of 2 inches; separation of nerve; prompt and complete recovery from paralysis. II. Lacerated wound implicating the musculo-spiral nerve associated with scalp wound and injuries to the shoulder-joint. III. Fracture of the neck of the scapula; displacement of the head of the bone; pressure on and adhesions to the brachial plexus of nerves; compete paralysis of sensation and motion; operation; immediate improvement. IV. Complete division of the fifth cervical nerve; its secondary suture; slow restoration of motion and sensation.

Jacobson contends that when a nerve has been simply stretched over or caught between fragments of bone or entangled in a callus or bound down by adhesions and when no visible damage to the nerve substance has occurred the return of functional activity is prompt and satisfactory without the energetic and long-continued use of such therapeutic measures as electricity, massage, hydrotherapy or the like. But when a nerve has been evidently damaged and most certainly when it has been completely severed the after-treatment is quite as important to the restoration of its functions as is the surgical operation which seeks to remedy the local damage done. It must also be thoroughly understood that whether primary or secondary suture has been undertaken the long-continued application of these measures will be found necessary. Many months may elapse without apparent improvement. The treatment must not be abandoned. The end-result will well reward the effort. Secondary suture has been performed as late as nine, eleven and fourteen years after the receipt of the injury and marked benefit has attended the surgical treatment.

36. **Heroin Habituation.**—The authors believe that the prevalence of the habit is steadily growing, especially since there is now a greater difficulty in obtaining, without prescription, preparations containing the more active opium compounds. From the statements of their two patients there is a certain sense of stimulation and well being induced by heroin which surpasses in its delight that experienced from morphin and they assert that the habit is quite common among their associates. Apparently, judging from these two instances only, the immediate habit is broken with much less suffering and greater ease than morphinism or cocainism and the pathologic and physiologic effects are much less serious than in the more frequent habits.

Pennsylvania Medical Journal, Athens

August

40 *Subacromial Bursitis; Its Etiology, Anatomy and Pathology. A. R. Allen, Carlisle.
41 *Treatment of Subacromial Bursitis. J. T. Rugh, Philadelphia.
42 *Total Paralysis of the Brachial Plexus Due to Traumatism Causing Evulsion of the Component Roots of the Plexus. C. K. Mills, Philadelphia.

43 *How Shall We Recognize and Treat Carcinoma of the Uterus? E. E. Montgomery, Philadelphia.
44 Infection, Immunity, and Serotherapy. W. R. Davies, Scranton.
45 *Physician and Public Health. J. M. Anders, Philadelphia.
46 *Medical Profession To-Day and Business End of It. G. D. Nutt, Williamsport.
47 Looking Backward. W. T. Davison, Canton.

40, 41 and 42. Abstracted in THE JOURNAL, Nov. 5, 1910, p. 1672.

43. **Carcinoma of Uterus.**—Montgomery emphasizes that cancer is an insidious disease, the advent of which is not discovered sufficiently early by the symptoms which are usually considered as indicating it, and that the practitioner should be on the alert for signs which will denote its appearance much earlier than those on which the profession is accustomed to depend.

45. **Physician and Public Health.**—The physician in his professional life is frequently called on to render services without full and sometimes without any compensation. Anders says he should give his best under all circumstances, for by so doing he is constantly growing in power, capacity and efficiency. Such a one, in comparison with a selfish spirit, will also in the end attract larger compensation. It has been wisely said that the man who refuses to do more than he is paid for soon becomes as small as his earning capacity. On the other hand, he who earns more than his compensation thereby makes himself greater than his salary. By rendering much service to both patients and the public, physicians in turn receive much.

46. **Medical Profession To-Day and Business End of It.**—The profession as a whole does not, in Nutt's opinion, wield the influence it should in a community, for the betterment of humanity and the eradication of superstition and quackery. If all the licensed medical men were united in one body, like other organizations that associate themselves together for mutual advantage and protection, there would not be any question of unpaid accounts or indignant feelings when bills are presented. One of the greatest means or influences that would place physicians on a firm financial basis with other learned professions in regard to their income, as well as enable them to command the respect and esteem of the public, is being more liberal and human in the treatment of each other, banding themselves together in a well-organized society, showing mutual respect for one another's interests and being willing to sacrifice self rather than a fellow practitioner. Physicians have been fighting among themselves too long; the public is too cognizant of their selfishness and petty jealousies, and in the past has used this trait or attitude of jealousy to belittle or discredit the profession.

New York Medical Journal

August 26

48 Forty-Six Years of Medicine in New York. F. P. Foster, New York.
49 Value of Meat Broths. T. Darlington, New York.
50 Recent Corrective Tenement Legislation. H. A. Smith, New York.
51 Modern Vitalism. C. E. Woodruff, Cebu, P. I.
52 Scab Formation in the Nose. W. P. Porcher, Charleston.
53 Case of Malposition of the Liver. F. L. Hupp, Wheeling, W. Va.
54 Diagnosis of Benign Stenosis of the Pylorus and Duodenum. N. Gross, New York.
55 Case of Mixed Astigmatism Presenting Symptoms of Brain Tumor. A. Brav and M. Staller, Philadelphia.

Texas State Journal of Medicine, Fort Worth

July

56 Surgical Solution of the Problem of Race Culture. M. Duggan, San Antonio, Texas.
57 *What Shall We Do For Our Tuberculous Patients? B. Cornick, San Angelo, Texas.
58 Temptations of the Local Medical Examiner in Making Life Insurance Examinations. J. E. Dildy, Lampasas, Texas.

57. **Treatment of Tuberculosis.**—Inasmuch as Nature, unassisted, slowly and gradually but surely, cures 80 per cent. of all the cases of tuberculous infections among those races in which the disease is and for ages has been most prevalent, and inasmuch as this wonderful achievement, which until recently was incredible, is the result of Nature's methods and processes of inducing immunity, the treatment of tuberculosis in Cornick's opinion should be based on these same principles. He endeavors to secure by well-proved sanatorium methods the speediest arrest of the active progress of the disease. This result he believes can be more quickly and certainly, and, in the long run, more economically accomplished at a sanatorium than at home; but for financial reasons, or for lack of adequate provision, even a three-months' sojourn at a sanatorium is as yet out of reach of many thousands of patients who must be treated at home. Then he would educate each patient along the lines of personal hygiene, sanitation and right living, so that he will not infect others, will not reinfect himself, and will know the simple program of right living best calculated to prevent a relapse, so that, with an arrest of his tuberculous process, he may reasonably hope to live out the allotted span of three score years and ten. This ideal education in right living may be taught outside of a sanatorium, but the patient will acquire it better and more quickly if he goes to school for a time in a well-conducted institution, where he may learn almost as much by association with his fellow pupils, his classmates, as from his instructor; and where his education is the more lasting, because, for a term, he himself lives the ideal life.

Medical Fortnightly, St. Louis

August 25

59 Reasons for Disinfection in Tuberculosis. T. Y. Hull, San Antonio, Texas.
60 The Supervention of Carcinoma on Site of Chronic Ulcer of the Leg. D. W. Basham, Wichita, Kan.
61 Chloroform Habit. W. F. Waugh, Chicago.
62 Specialism. D. L. Field, Jeffersonville, Ind.
63 Artificially Cooled Hospitals. C. E. Woodruff, Manila, P. I.

Archives of Pediatrics, New York

August

64 *Dietetic Management of Disorders of Gastric Digestion in Infants. A. Hand, Jr., Philadelphia.
65 *Diagnostic Value of Gastric Analysis in the Digestive Disturbances of Infancy. T. W. Clarke, Utica, N. Y.
66 Surgery of the Infant Stomach. E. B. Hodge, Philadelphia.
67 Pyloric Stenosis in Infancy. J. C. Gittings, Philadelphia.
68 Nursing Statistics Derived from the Study of the Infancy of 1,500 Children and a Contribution to the Cause of the Summer Infant Mortality. H. Schwarz, New York.
69 *Grippe on the Pacific Coast. S. Blum, San Francisco.
70 *Case of Congenital Stenosis of the Ileum Apparently of Syphilitic Origin. F. Van Der Bogert, Schenectady, N. Y.

64. **Management of Gastric Digestion in Infants.**—The percentage method checked off from time to time by the calorimetric method, is endorsed by Hand in the management of gastric digestion in infants. He gets better results with mixtures of milk, 16 per cent. cream, barley water, granulated sugar and lime water than with any other plan, so modifying the milk that the fat never exceeds 4 per cent., usually 3.5 to 3.8 per cent., rarely giving as low a protein percentage as 1 (usually starting at 1.5 or 1.8, according to age) and increasing it as rapidly as possible, using for the carbohydrates cane sugar and barley water, made from pearl barley, to total 6 per cent. He is sometimes compelled to use peptonization, which he says he likes to do for more than one or two months, classing this with low proteins and the measures mentioned earlier, which interfere with gastric digestion (great alkalinity, sodium citrate, whey, buttermilk) as having the great fault of not developing the digestive powers of the stomach. However, at times these other measures are valuable, and he has sometimes found it necessary to give whey for a time, or buttermilk (and of the two, he prefers the latter made of skimmed milk and fermented with the compressed tablets of the Bulgarian bacillus). These give the digestive organs considerable rest, and at the same time introduce enough nourishment to sustain life for a little while. They may be immediately or gradually supplanted by other mixtures; by adding cream to the whey, or fermenting the whole milk, or the feedings may be alternated.

65. **Diagnostic Value of Gastric Analysis.**—Clarke believes that a suitable test meal properly used may prove in time to be an aid of very considerable value in the treatment of certain of the digestive disturbances of infancy. Before its actual worth is proved, however, a large amount of investigation and practical application of the results on ill children will be necessary. The individual variations in the infant are far greater than in the adult and the correct interpretation of

the results is therefore proportionately more difficult. The most important features in the investigation which are to come must be uniformity, uniformity in method, uniformity in the test meal, uniformity in time and uniformity in the method of analysis.

69. **Influenza on the Pacific Coast.**—Endemic influenza on the Pacific coast, Blum says, resembles the usual type of influenza in that it is an infectious disease caused by Pfeiffer's influenza bacillus, and characterized by inflammation localized especially in the respiratory tract, and by pronounced systemic disturbances. It differs from the recognized type of influenza in two respects, (1) its mildness; (2) its more wide-spread occurrence. Clearly defined, influenza is in general a severe disease, and is accordingly regarded as serious and treated with respect and caution. On the Pacific coast endemic influenza, because of its low fever, freedom from prostration and from immediate danger, appears to be so trivial an affection that it is generally unrecognized as influenza, and, when recognized, is esteemed lightly and treated carelessly. As a result numerous cases are constantly present and widely disseminated. It is particularly common among children. Its spread is unhindered by appropriate prophylaxis. At present it is an insidious, slow-working and seemingly mild affection which, however, keeps alive and active the germ of virulent influenza.

70. **Congenital Stenosis of Ileum.**—The baby in this case was born Nov. 6, 1910, at full term. The baby's bowels moved for the first three weeks two or three times daily. At three weeks constipation was first noticed, a day or two elapsing between movements. At Christmas time the baby went three days and two nights without a movement. After three weeks there was vomiting of "brown" milk, but there was no vomiting of medicines (the medicines were probably all laxatives). Before this period there was some regurgitation of the milk in its natural state. Abdominal enlargement was noted at four weeks; the child was nursed only, and the intervals between nursing were said to be regular. In January, 1911, constipation was the symptom which alarmed the family. The abdomen was markedly distended, the abdominal wall thin, and the coils of intestine were visible on the surface. Reverse peristalsis was noted once during the examination, but never again while the child was under observation. Vomiting occurred just previous to the visit and a cloth on which the child had vomited showed a small streak of matter of a somewhat golden yellow color, resembling that of an infant stool and giving a faint but characteristic odor. This was undoubtedly fecal vomitus. The bowels were constipated, but a small plain water enema gave a fairly good result. There was marked emaciation.

The baby was put in the children's ward of the Ellis Hospital where several good evacuations of the bowel were obtained through high enemata. The abdominal distention, however, continued, and the coils of the intestine were still prominently displayed on the surface. Death occurred on Jan. 14, 1911.

At autopsy a narrowing of the small intestine nearly, but not completely, closing the lumen of the bowel was found in the ileum 23 inches above the ileocecal valve. This partial obstruction was apparently congenital. The bowel above was markedly dilated, with a decided increase of the muscle tissue extending more than 2 inches above the point of obstruction. The portion of ileum below was narrow. Water poured into the bowel would slowly work its way through to the portion below. The interesting point in the case, aside from its apparent etiology, was the occurrence of fecal vomiting with apparent ability to freely evacuate the bowels, due, of course, to the fact that the liquid bowel contents could readily, but slowly, pass through the obstruction. At times, however, compensation, so to speak, was lost and a reverse action followed.

Journal of South Carolina Medical Association, Charleston

August

71 Preventive Medicine: What It Has Done and What It Can Do If State Will But Recognize Its Obligations to the Public. J. A. White, Richmond, Va.
72 Significance of Bacillus Coli in Water. F. L. Parker, Jr., Charleston.
73 Functions of the Ductless Glands. M. J. D. Dantzler, Elloree, S. C.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

August

74 *Epithelial Obstructors and Conductors. R. T. Morris, New York.
75 *Diabetes Mellitus from a Surgical Standpoint. A. King, Portland, Me.
76 Manual Therapy in Some Minor Disorders. E. P. Corson-White, Philadelphia.
77 Surgical Diseases of the Stomach. L. J. Hammond, Philadelphia.

74 and 75. Abstracted in THE JOURNAL, June 3, 1911, p. 1677.

New Mexico Medical Journal, Las Cruces

August

78 Pellagra and Transfusion. J. B. Thomas, Midland, Texas.
79 Gangrene of Gall-Bladder: Report of Three Cases. H. Crouse, El Paso, Texas.
80 Significance and Management of Hemorrhage from the Nose. M. Friedman, Carlsbad, N. M.
81 Infections of the Kidneys, Pyelitis, Pyonephrosis, Pyelonephritis, Renal Abscess. C. M. Yater, Roswell, N. M.
82 *Some Experience with Guaiacol and Ichthyol as a Local Antiseptic. J. R. Gilbert, Alamogordo, N. M.
83 *Some Practical Points Relative to Rabies. F. S. Cary, El Paso, Texas.
84 Abscess of the Ear, Its Importance, Dangers, etc. W. G. Shadrach, Albuquerque, N. M.

82. **Guaiacol and Ichythol as Local Antiseptic.**—For some time Gilbert has been using a mixture containing 1 dram each of guaiacol and ichthyol to the ounce of glycerin as a local antiseptic in the treatment of infected wounds. He says his results have been excellent.

83. **Practical Points Relative to Rabies.**—The method followed at the El Paso Pasteur Institute for the cauterization of wounds is as follows: Apply hot bichlorid, 1-1,000, or boric acid solution to the bitten part, or having soaked it in the same, dry the part; then apply with a cotton wool mop so shaped as to fit the crevices of the wounds, strong carbolic acid solution; immediately take another mop and apply nitric acid, whereupon a slight explosive puff takes place; after this neutralize the nitric acid with a saturated solution of bicarbonate of soda, and wash off with alcohol, which arrests the action of the carbolic acid. Dress the wounds dry, retaining the compress in place by a bandage or adhesive plaster; in some cases collodion application may be used. If the slough or scab is sterile, as is often the case, further application to the wound should be avoided. The compress and bandages may be removed when cleanliness necessitates. The wounds should be allowed to heal under aseptic scab unless complications, i. e., infection, suppuration, etc., prevent.

Journal of Indiana State Medical Association, Fort Wayne

July

85 Cases Treated by Salvarsan. F. B. Wynn, Indianapolis.
86 Importance of Early Recognition of Internal Ear Involvement in Acute Infectious Diseases. W. H. Field, Evansville.
87 Vaccine Therapy: Principles and Practice of Immuno-Therapy. B. W. Rhamy, Fort Wayne, Ind.

Medical Record, New York

August 26

88 Triumph of American Medicine in Construction of Panama Canal. J. E. Mears, Philadelphia.
89 *Fractures of the Femur. J. A. Gilbert, Portland, Ore.
90 *Adenosarcoma of the Left Kidney in a Child; Nephrectomy; Recovery. V. C. Pedersen, New York.
91 Giant Cell Sarcoma Treated Successfully by Radium. W. B. Snow, New York.
92 True Congenital Unilateral Hypertrophy. A. J. Davidson, Philadelphia.
93 Operative Treatment of Acute Appendicitis. J. B. Bissell, New York.
94 *Three Cases of Brill's Disease. L. Louria, Brooklyn, N. Y.
95 *Case of Tuberculous Meningitis. H. D. King, New Orleans, La.
96 *Case of Missed Abortion. J. Ohlbaum, New York.

89. **Fractures of Femur.**—Gilbert describes a method of treatment of fracture of the femur for which he claims originality of method and apparatus. Extension is continuous, regardless of the position of the patient; elevation of the foot of the bed is unnecessary, and the patient can be turned on the side; adhesive strips applied to the body are more comfortable than counterpressure in the groin and perineum; pain during the application of the apparatus or while wearing

it is almost *nil*, and one attendant can manage the patient. This method is well adapted to any cast for hip, body or femur.

90. **Adenosarcoma of Left Kidney in a Child.**—Pedersen presents the history of a case of adenosarcoma of the left kidney occurring in a child of three years, previously healthy. The important points in this history were the appearance of copious hemorrhages from the bladder and of pain in the left side. It was found that the urine escaped from only one ureter. Operation for removal of the kidney showed that it was an adenosarcoma. The child recovered.

94. **Brill's Disease.**—Louria is inclined to believe that this is not a new disease but a mild form of typhus fever.

95. **Tuberculous Meningitis.**—The patient whose history is is given by King suffered from nervous diseases of functional character for some years before she was taken with coma, followed by an irregular temperature which rose to 107.8 F. Lumbar puncture gave marked lymphocytosis, a positive Noguchi reaction and no tubercle bacilli. The patient suffered from cough for some time before her illness, with loss of weight and general weakness. Rigidity and Kernig's sign were present. No autopsy was allowed.

96. **Missed Abortion.**—The interesting point in this case is that the woman had been carrying a dead fetus *in utero* for probably six and a half months, without it causing her to have any physical disturbance whatsoever. Last menstrual flow occurred in May, 1910. In June, 1910, the woman began to show her usual symptoms of pregnancy, i. e., cessation of menses, which had been punctual outside of her puerperal periods, morning sickness, and the enlargement of the breasts. She consulted several physicians when her menses ceased and was told she had a pregnancy of three months or thereabouts. At about the fifth month from the time her menses ceased she commenced to look for signs of "life," which did not appear. She diagnosed her case as one of early menopause and ceased to give herself a thought about her condition. She was gaining in weight and felt comfortable. On March 12, 1911, at about 3 a. m., she commenced to have cramp-like pains and thought they were her bowels, having eaten some food the night previous which might have caused her to have a "spoiled stomach," as she called it. The pains became more severe and she decided to send for a physician. Ohlbaum was called in and reached her home at 7:30 a. m., March 12. When he got there he was shown a sac which the woman had expelled. On examination he found it contained a fetus of about three and a half months. The fetus, cord and placenta were all connected. Microscopically the placenta showed a fatty degeneration of the entire mass. The fetus was of a dirty, dark, brownish-black appearance.

Lancet-Clinic, Cincinnati

August 26

97 Certain Newer Theories on Etiology of Diabetes Mellitus and Its Treatment. L. G. Heyn, Cincinnati.
98 Chronic Pancreatitis, with Reference to the Present Status of the Cammidge Reaction. J. H. Schroeder, Cincinnati.
99 Some Considerations of the Risk in Life Insurance Examinations, with Special Reference to Tuberculosis. C. L. Wheaton, Chicago.

Vermont Medical Monthly, Burlington

August 15

100 Diagnosis and Prognosis of Valvular Lesions of the Heart. C. H. Beecher, Burlington, Vt.
101 Diabetes. W. C. Abbott, Chicago.
102 Cosmetic Surgery. C. M. Cobb, Boston.
103 Extrauterine Pregnancy. R. H. Seelye, Springfield, Mass.

Canadian Medical Association Journal, Toronto

August

104 A Chronic Cholera Carrier. J. G. Adami, Montreal, A. Vallee, Quebec, and G. E. Martineau, Grosse Isle.
105 *Typhoid Bacillus Carriers. J. C. Meakins, Quebec.
106 *Infant Mortality in Canada. C. A. Hodgetts, Ottawa.
107 *Typhoid at Ottawa. L. Drum, Ottawa.
108 *Fort William Epidemic of Typhoid in 1906. F. C. Douglas, London.
109 Local Typhoid Epidemic at Murray Bay, P. Q. C. K. P. Henry, Murray Bay.

105. **Typhoid Bacillus Carriers.**—In view of the frequency of typhoid carriers, the difficulty of cure, and the great danger they are to the public health, Meakins urges that every means should be employed for their recognition, prevention and isolation. The task of recognition of transitory carriers falls to the general hospitals, where over 50 per cent. of the cases of typhoid are treated. Every case, before discharge, should be examined thoroughly bacteriologically, and should be kept in the hospital or under strict observation and be treated by homologous vaccines until the excreta are free of typhoid bacilli beyond peradventure. If they could be reexamined six to twelve months afterwards, especially the adult women patients, much would be gained. Search for the source of infection in every case of typhoid, and the district physician should be informed when a known carrier is in his jurisdiction, so that he can keep him under supervision. Those patients who are not treated in the hospitals should be strictly watched and frequently examined by a special department of the board of health.

Germany has dealt with this question in a masterful way. In the southwestern part of the empire typhoid fever is largely endemic. On the recommendation of Koch, stations were established in this district under the municipal government. Each laboratory was well supplied with skilled bacteriologists, who worked in conjunction with the local authorities. Their duties were fourfold—to diagnose typhoid, to ascertain the source of infection in each case and to examine for infected persons, to supervise and regulate the general hygiene of the district, and to make bacteriologic examinations of stools and urine, in order to determine when convalescents cease eliminating typhoid bacilli. By their work they have made great strides in the prevention of typhoid, more especially as regards the typhoid carrier. As there is no other source for malarial infection than mankind, so it is with typhoid, which practically means that if we can prevent, cure or render innocuous the typhoid carrier, we can get rid of typhoid, but not until this has been accomplished.

106. **Infantile Mortality in Canada.**—From the figures given by Hodgetts and the comparisons made, it is quite evident that the infant mortality rate (12 in 100) is not what it should be. It is much too high for a country so sparsely populated, where poverty in its severe forms is non-existent, and the figures quoted carry the conviction that there is a wanton destruction of this item of national resources. Why should the general, infant death-rate be so high, asks Hodgett, when there are not the many social and sanitary problems staring people in the face as have the nations of Europe, and even the United States? Poverty is there, but not to the same alarming extent; unsanitary housing conditions are to be met with, but are not so apparent. The cities are, on the whole, healthy; drainage is good, although in regard to water-supplies and sewage disposal, Hodgetts says, they have yet much to do. Milk-supplies are only fair; that there is room for improvement is shown by the movement being made for improvement is shown by the movement being made for "pure milk." The people, as a race, are fairly healthy; and the climate is looked on as that best suited for an active, vigorous manhood and womanhood.

Hodgetts suggests that the trouble begins in the antenatal period of infant life; that the slaughter of the innocents continues from birth onward, is in evidence; and that much of this wanton destruction could be prevented, is more than certain. In civil law, ignorance is no excuse; how much greater then is the sin of the parents when it must be pleaded that they were ignorant of their duties and responsibilities to their offspring, with the result that the little ones died prematurely. Ignorance of parental duties is a great and growing evil, one which must be met by a better and broader education in all that relates to the child and child life. Young women must be taught the duties of motherhood; young men, the responsibilities of fatherhood; the municipality, the duties it owes to the child in providing for clean housing as well as for proper housing accommodation, pure milk-supplies, and, by civil enactment, seeing that the environment of the mother and child shall be of the best. The state, too, must move along lines which it has already done to improve livestock, to foster our agricultural wealth, spending money for the purpose.

107. **Typhoid at Ottawa.**—Drum concludes that this epidemic was due solely to the infected water-supply. Of course, there were some cases due to contact, and secondary infection through food, but the original and continuing factor was the water-supply.

108. **Fort William Epidemic of Typhoid in 1906.**—The causes of this epidemic are summed up by Douglas as remote and immediate. The remote included: 1. Presence of numerous endemic cases without report of same to the authorities. 2. Systematic pollution of soil and general unsanitary condition of the whole place. 3. Contamination of the water-supply with sewage. The immediate cause was a specific contamination from three main sources: 1. Forde Street sewer, 1,400 feet above the intake, two cases of typhoid. 2. Town pumping-house, four cases of typhoid. 3. Foreign section, 1½ miles above the intake, six cases.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

August 15

110 *Cerebrospinal Syphilis. W. C. Nichols, Fargo, N. D.
111 *Syphilis, With Reference to Recent Advances in Diagnosis and Treatment. J. M. Armstrong, St. Paul.
112 Present Status of Serum-Therapy. P. R. Burkland, Vermilion, S. D.

110 and 111. Abstracted in THE JOURNAL, July 8, 1911, p. 58.

Woman's Medical Journal, Cincinnati

August

113 Dementia Præcox. M. K. Isham, Columbus, O.
114 Points for Consideration in Determining a Fit Public Water-Supply. M. Macmillan, New York.
115 Streets and Sewers and the Disposal of City Wastes. H. D. Parsons, New York.
116 Hygiene of Streets. J. J. Cronin, Chicago.

Buffalo Medical Journal

August

117 Latent Sinusitis. G. F. Cott, Buffalo.
118 *Colds, Their Causes and Treatment. S. F. Snow, Syracuse, N. Y.
119 Treatment of Syphilis. W. W. Quinton, Buffalo.
120 Three Years with the Army of the Potomac. W. W. Potter, Buffalo.

118. **Causes and Treatment of Colds.**—It is Snow's practice to give a medium dose of castor oil or salines between the doses of calomel, if the auto-intoxication is persistent or active and calomel has been used, the aim being of course to prevent cumulative effects from the mercurial. He has used a pill composed of blue mass, colocynth compound, strychnin sulphate and belladonna for ten years, with not one instance of mercurial poisoning, nor one instance tending to show that a constipated habit has been induced. Such a drug combination does not, he says, require an after-flushing with salines, and is sufficiently effective, except in extreme or obstinate cases in which nothing acts so well as calomel.

Maryland Medical Journal, Baltimore

August

121 Pregnancy Complicated by Heart and Kidney Disease, with Special Reference to the Treatment of Severe Cases. E. H. Kloman.
122 Stereopticon Lesson in Sex Hygiene. M. Fairchild, Baltimore.
123 Sewage and Sewage Disposal. C. W. G. Rohrer, Baltimore.

Louisville Monthly Journal of Medicine and Surgery, Louisville

August

124 Sacro-Iliac Strain, With Report of a Case of Sciatica. J. J. Moren, Louisville.
125 Ruptured Duodenal Ulcer. J. G. Sherrill, Louisville.
126 Tubal Pregnancy Twice Within a Year in Same Patient. L. S. McMurtry, Louisville.
127 Dietary Idiosyncrasy. J. M. Ray, Louisville.
128 Birdshot Wound of Chin. A. M. Vance, Louisville.
129 Dorsal Myelitis. A. M. Vance.
130 Cervical Ribs. A. M. Vance.
131 Permanent Hemianopsia in Patient Long Subject to Migraine With Temporary Hemianopsia. S. G. Dabney, Louisville.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

August

132 What Every Physician Should Know of Ophthalmology. H. D. Bruns, New Orleans, La.
133 Use of Antiformin in Examining Serous Pleural Effusions for B. Tuberculosis. W. Allan, Charlotte, N. C.
134 Pyloric Stenosis. A. M. Willis and J. M. Hutcheson, Richmond.
135 Surgery of Gall-Bladder. H. Norris, Rutherfordton, N. C.
136 Acute Pancreatitis. P. L. Gibbon, Charlotte, N. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 19

1 The Surgeon and Industrial Worker. W. D. Spanton.
2 *Afferent Fibers in Ventral Spinal Roots. L. J. Kidd.
3 Pancreatic Cyst: Rupture: Recovery. H. Walker.
4 An Intracellular Stage in Development of Trypanosoma Lewisi in the Rat-Flea. E. A. Minchin and J. D. Thomson.

2. **Afferent Fibers in Ventral Spinal Roots.**—Kidd has collected a large amount of evidence, surgical, experimental, histologic and embryologic, which leads him to the inevitable conclusion that afferent fibers, in some cases algetic, in others reflex, exist in the spinal ventral roots of man and many other vertebrates. In his opinion, we ought to divide ventral as well as dorsal roots in cases of intractable pain, except in the case of the third and fourth cervical ventral roots; here division would cause motor palsy of the diaphragm on the side of section; but, unilateral phrenic palsy in man and laboratory animals does not usually cause danger to life. It is, of course, true that ventral root division for pain would always cause some motor palsy, but the patient would probably almost always prefer this disability to a continuance of his pain. The fact that in some cases dorsal root division does abolish all pain suggests that it may be only in some regions of the spinal cord that any afferent fibers pass up ventral roots to their endoneural ganglionic groups of cells.

Certain experiments suggest to Kidd in the clearest manner that the ventral cervical roots of the pigeon, and the ventral roots of the cauda equina of the dog, contain afferent fibers which supply the reflex component of the muscle tonus of the wing muscles and the tail muscles, respectively. The origin of these ventral root afferents in the spinal cord region, whether cervical (pigeon), thoracic and lumbosacral (man), or sacrococcygeal (dog), is entirely from endoneural afferent ganglionic cells, situated, Kidd believes, in (1) the smaller cells of Clarke's column, (2) the solitary cells of the dorsal horn, (3) some of the "middle cells" of the cord, and possibly also (4) some of the cells of the nucleus cuneatus of the bulb. Kidd denies that any motor cells exist in (1) tectum mesencephali, (2) locus coeruleus, (3) Deiter's nucleus, (4) dorsal vago-glosso-pharyngeal nucleus (ganglion), or (5) in any of the four spinal dorsal-zone cell groups mentioned. Since all these parts are developed in the dorsal zone of the embryonic brain or cord (the alar lamina of His), and since, further, there is no instance known in any vertebrate of motor fibers rising in cells derived from the alar lamina, Kidd holds that it is nothing less than a morphologic outrage to teach that any of these cell-groups give origin to motor fibers.

Lancet, London

August 19

5 Housing and Town Planning. F. E. Fremantle.
6 *Hereditary Tendency Toward Twin-Bearing, and the Influences Aiding in the Determination of Sex. J. Oliver.
7 Discrimination of Color. F. W. Edridge-Green.
8 Pathologic Relationship Between the Appendix and the Uterine Adnexa. J. Birt.
9 *Meningitis Following Measles. C. A. Basker.
10 Convenient Method to Test the Visual Fields for Color Without Use of a Perimeter. T. A. Williams.

6. **Hereditary Tendency Toward Twin-Bearing.**—Twenty-four patients out of every 2,500 that Oliver has seen have once or oftener given birth to twins, a proportion, that is, of about 1 in 104; therefore he is convinced of the existence of an hereditary tendency toward twin-bearing. In three only of these patients was there no history of twins either on the female or the male side, and in one or more of those it is quite possible that the default may have been due to ignorance. In this group there are twenty-eight sets of twins, as one patient has borne twins three times and two others had each had twins twice. The twins in thirteen instances are boy and girl, in twelve they are two girls, and only in three are they two boys. The aforesaid twenty-eight confinements produced altogether thirty-seven females and nineteen males, a proportion, that is, of practically two females to one male; and this, Oliver says, is fairly constantly the relationship of female to male births as a result of twin conceptions. This is a noteworthy phenomenon, since in all European countries,

whether the legitimate and illegitimate births be computed separately or together, the total annual number of male births always exceeds that of females, and this has been a constant revelation year after year in northern and southern countries alike. In England and Wales the total male and female births during the year 1907 were, respectively, 467,728 and 450,314, or proportionally 103 or 104 males to every 100 females. In countries, however, where polygamy prevails this relationship of male to female births is reversed, for polygamy produces about two female births to every one male. This relationship corresponds closely with that noted as a result of twin conceptions.

Judging from his own clinical facts and experience Oliver is convinced that the production of twins in the human female is not a chance affair, and has nothing to do with the deficiency of lime or potash or soda salts in the blood or generative tissues of the mother, for it is well known that deficiency of these salts so alters the sensitivity and irritability of the Fallopian tubes and uterus that well-marked symptoms make their appearance therefrom and abortion is apt to ensue. If, therefore, twin productions were in any way associated with deficiency in the amount of calcium, or potassium, or sodium in the maternal blood, twin productions would more commonly result in abortions than they do.

9. **Meningitis Following Measles.**—During the first half of this year, when an epidemic of an unusually severe form of measles was prevalent, six children suffering from meningitis were admitted into Addenbrooke's Hospital. In one of the patients the disease was primarily pneumococcic. The other five had symptoms of post-basic meningitis. In three of these the cerebral symptoms followed measles, one a week, one six weeks, and one eight weeks after the rash had been seen. In all five the onset of the disease was sudden; most of the patients vomited and rapidly lost consciousness, and retraction of the head and Kernig's sign were well marked. The temperature was usually not above 101 F., and the pulse and respirations were irregular. In three cases improvement followed and seemed to be due to lumbar puncture. One patient recovered completely, and though meningitis was diagnosed it was not proved, as an examination of the cerebrospinal fluid was sterile and showed no excess of cells. The other four patients died and their brains were examined, and all showed a meningitis alike in appearance. There was a greenish-yellow exudation of lymph into the pia-arachnoid membrane at the base of the brain with more fluid than usual in the ventricles. In the cerebrospinal fluid of one patient (who had not had measles recently) the meningococcus of Weichselbaum was found, and in another diplococci were seen in the exuded lymph at the base of the brain. On account of the similarity of the clinical course of the disease and of the appearance of the brains after death, Birt suggests that it is not improbable that the meningococcus was responsible for the meningitis in all the cases. Whether the measles disposed to, or whether it was accidentally followed by, the meningitis is uncertain, but in either case the occurrence of nervous symptoms after measles is interesting on account of its rarity.

Australian Medical Journal, Melbourne

July 21

11 Diagnosis of Nephrolithiasis. J. Smith.
12 Id. F. D. Bird.
13 Modern Midwifery. A. A. Lendon.

Australasian Medical Gazette, Sydney

July 20

14 South Australian Branch of the British Medical Association. W. T. Hayward.
15 *Sprue and Ankylostomiasis, Treatment. W. C. C. Macdonald.
16 The Methodical Surgical Exploration of the Abdomen. T. Fiaschi.
17 *New Method in Operation for Hemorrhoids. W. T. Chenhall.
18 Case of Acute Yellow Atrophy of the Liver. T. H. May.
19 Obstetrics in the Lady Bowen Hospital. A. Marks.
20 Ten Years' Experience of Morphin-Scopolamin. B. Korff.
21 Smith's Operation for Extraction of Cataract in Capsule; Report of 253 Cases. J. C. Halliday.
22 Case of Pyonephrosis Complicating Puerperium, Operation, Specimen. R. Worrall.
23 *Appendix Open at Two Ends. A. L. McLean.

15. **Sprue and Ankylostomiasis.**—The treatment practiced by Macdonald in cases of sprue for many years with marked success consists in the administration of fairly large doses of chlorate of potash at frequent intervals and continued for a considerable period, and treating the diarrhea and dyspepsia by carbonate of bismuth and sulphate of morphin or oxybromid of bismuth. He recommends the following: Chlorate of potash, 1 oz.; water to 12 oz., 1 tablespoonful every four hours after shaking the bottle. The potash does not dissolve in this proportion, but Macdonald thinks there is an advantage in giving some of the undissolved salt in each dose. For the dyspepsia and diarrhea he recommends the following:

℞	Gm. or c.c.		
Bismuthi carbonatis	16		ʒiv
Liquoris morphinæ sulphatis	12	or	ʒiij
Glycerini	16		ʒiv
Aquæ q.s. ad	120		ʒiv

M. et Sig.—One dessertspoonful three times daily in water.

This mixture seems to speedily check the diarrhea, and should be then given twice daily, and later at night only until the stools become formed. If the bowels become constipated some aperient pill with blue pill is most suitable. In Macdonald's opinion castor oil and the salines are contra-indicated, as they sometimes cause serious relapses and seem to irritate. The whole treatment can be stopped for a week or so if the case progresses well. Slight relapses are sure to occur, but with continued treatment the relapses get less and less, until complete convalescence is established. Experience has taught Macdonald that a fairly liberal diet can safely be ordered in conjunction with the above treatment. Milk puddings, eggs, soup, bread and butter, underdone meat and white meat, etc., can be given.

17. **New Operation for Hemorrhoids.**—In Chenhall's method each pile is grasped in a pair of long, light, slightly-curved forceps, care being exercised to close the blades just within the mucocutaneous margin and their points on the main vessel in the pedicle above. By drawing the forceps handles toward the lumen of the bowel, the mucocutaneous junction is rendered tense and is divided by a clean-cut knife incision immediately behind the forceps blades to the depth of half an inch. A fine, round, curved needle, threaded with No. 1 plain catgut, is now passed through both sides nearly the full depth of the incision, which is then closed in a direction parallel to the length of the bowel. This suture, when tied, serves as a tractor. Separating the tractor and forceps, the mucous membrane, now rendered tense, is divided by the knife on each side behind the forceps blades. The submucous tissues are carefully raised or divided. The next suture is now inserted. Transfixion of even small veins is easily avoided in passing the sutures, since the floor of the small wound is exposed. This cannot be claimed when sutures are passed through tissues gripped by forceps. Ligature may be, but is rarely, necessary for any vessels. Using, in succession, each suture as a gentle tractor the same procedure is repeated until the upper part of the pedicle is reached. This, which contains the main vessel, is ligatured with No. 2 catgut, divided, tucked down and buried in the end of the incision by a small catgut suture, which closes the upper end of the wound, passing in transit through the end of the incision and the pedicle ligature is rendered additionally secure. This is most important. A long line carrying tied sutures marks the site of the original pile. There is practically no bleeding, and postoperative pain is so slight that sedatives are rarely necessary after the first hypodermic of morphia. Chenhall emphasizes that it is important that sutures be not tied unduly tight. Suppositories should never be used, a dry, sterile dressing pad being the only dressing required. The bowels, carefully prepared before operation, should be allowed to rest until the fourth or fifth day.

23. **Appendix Open at Two Ends.**—The patient, female, aged 28 years, had acute pain and tenderness in the right side. There was no vomiting, but constipation was marked. Since then similar attacks, slighter in character but never with vomiting, have occurred. She noticed at the first attack that she limped with her right leg when walking, and this action relieved the pain. Since her marriage, two years ago, she had had a good deal of pain in both iliac fossæ. On abdominal section there was a condition of double salpingitis. The appendix was near the brim of the pelvis, bound down by adhesions to the cæcum and adjoining portion of the small

intestine (lower end of the ileum. On separation of the superficial adhesions there was found a hard cord-like adhesion joining the appendix at a point ½ inch from its tip with the ileum. This was inseparable by digital manipulation, and on being cut through was found to enclose the lumen of a short canal which gave access from the appendix to the ileum. The proximal end of the appendix was patent into the cecum, and within the former was a small, hard fecal concretion. The condition evidently pointed to a preexisting appendiceal abscess which had burst into the small intestine, though the previous history scarcely conformed to such an occurrence in severity of symptoms.

Medical Press and Circular, London

August 9

24 Diabetic Polyneuritis. Claude.
25 The Ritual and Growth of Surgery. J. Lloyd.
26 Merits of a Relatively Low Protein Diet. C. Watson.
27 Results of Prostatectomy. H. H. Young.

August 16

28 Action of Placental Serum on Cancer. Kraus and Graff.
29 Case of Pruritus Vulva. J. G. Tomkinson.
30 *Are Pellagra and Sprue One and the Same Disease? J. Burnet.
31 Mental Symptoms in Choreiform Disorders. E. Mapother.
32 Present Status of Radium Therapy. W. H. B. Aikins and F. C. Harrison.

30. **Pellagra and Sprue.**—Both pellagra and sprue are afebrile diseases. In both there are emaciation, loss of weight and general malnutrition as later symptoms. The most striking fact, however, is that cases of pellagra may not show any skin manifestations for a very long time, the only evidence present being a persistent and chronic diarrhea, which so closely resembles sprue that one cannot overlook this similarity. Burnet is convinced that the two diseases are one and the same.

Clinical Journal, London

August 9

33 Insomnia. R. Hutchison.
34 Racial Evolution of the British People; Its Importance in Pathology and Therapeutics. J. S. Mackintosh.

August 16

35 Intestinal Fistula. H. M. Rigby.
36 Limitations to the Successful Employment of Salicylates in Rheumatic Affections. A. F. Voelcker.

Bulletin de l'Académie de Médecine, Paris

July 4, LXXV, No. 27, pp. 1-44

37 Experiences with Spinal Anesthesia. (Contribution à l'étude de la rachinovocainisation lombaire.) E. Forgue and V. Riche.

Berliner klinische Wochenschrift

August 7, XLVIII, No. 32, pp. 1453-1496

38 *Surgery of Hypophysis Cerebri. E. Melchior.
39 Action of Pituitrin on Uterine Contractions. R. Stern.
40 Pituitrin in Obstetrics. O. Bondy.
41 *Wassermann Reaction and Experimental Syphilis. (Experimentelle Kaninchensyphilis.) F. Blumenthal.
42 Effect of Atophan on Excretion of Uric Acid. (Angriffspunkt des Atophans bei seiner Einwirkung auf die Harnsäureausscheidung.) E. Frank and B. Bauch.
43 Action of Hydrogen Peroxid on Enzyme Production. (Einwirkung von Wasserstoffsuperoxyd auf das enzymproduzierende Vermögen der Schleimhaut und auf die ausgeschiedenen Enzyme.) A. Marcuse.
44 New Method of Examining the Pupil of the Eye. (Nebst Beitrag zur Frage der Konvergenzreaktion und Mitteilung einiger wenig bekannter Phänomene am Auge.) S. Goldflam.
45 *Collateral Circulation of the Kidney. E. G. Lick.

August 14, No. 33, pp. 1497-1540

46 *Pyonephritis and Prostatitis Actinomycotica. T. Cohn.
47 *End Results of Prostatectomy. L. Casper.
48 Diverticula of Appendix. (Entzündliche Divertikel des Wurmfortsatzes.) W. V. Simon.
49 Sugar Metabolism in Addison's Disease. H. Schirokauer.
50 Feeding with Artificial Mother's Milk. H. Friedenthal.
51 Vaccinotherapy. G. Wolfsohn.
52 Uzara; a New Antidiarrheic. C. Bachem.
53 Overcorrection in Spastic Contraction. S. Peltesohn.
54 Roentgen-Rays and Sterility. H. E. Schmidt.

38. **Surgery of Hypophysis Cerebri.**—What is known of the surgery of the hypophysis as well as of the functions of this gland is presented in review by Melchior. He emphasizes the excellent clinical results that are obtained from operation, but insists that an early operation in suitable cases offers the only hope of giving the patient relief or of effecting a cure. The headache and the visual disturbances are regarded as a sufficient indication for the immediate performance of the operation

41. **Wassermann Reaction and Experimental Syphilis.**—The Wassermann reaction was sought for 107 times in fifty-five rabbits. The results were always negative. Fifty-four rabbits were infected with syphilis, fourteen through the anterior chamber of the eye and forty-two scrotally. Irrespective of the clinical history of these cases the test was negative. Twenty-five animals were infected by intravenous or intracardial injections; ten presented symptoms of general syphilis. The reaction was positive five times. In two of the animals the reaction was not accompanied by evidence of clinical symptoms. The reaction was obtained as early as the sixth week, but on the average not until the eighth week. The author concludes that his experiments show that a positive Wassermann may be obtained in cases of general infection.

45. **Collateral Circulation of Kidney.**—Lick is convinced that it is impossible to establish a collateral circulation in the kidney by means of decapsulation or otherwise which will equal the normal circulation through the renal artery. He warns against the use of this procedure in the treatment of cases of chronic nephritis.

46. **Actinomycosis of Genito-Urinary Tract.**—Cohn presents the case of a man who, fifteen years previously, was suddenly beset with vesical tenesmus and during this time voided urine containing both pus and blood. The symptoms slowly diminished in severity and after a few years disappeared almost entirely, although the pyuria and hematuria continued. For the past four years there have been present painful urination and dribbling of urine. The patient was pale and very much emaciated. The prostate was enlarged and was believed to be the seat of a purulent inflammation. Cystoscopy did not throw any light on the clinical history of the case. The interior of the bladder was negative. It was concluded, therefore, that while some of the pus might have come from the prostate, the large amount of pus in the urine pointed to a renal involvement to which the bladder inflammation was secondary. Tubercle bacilli were not found in the prostatic fluid nor in the urine but the actinomyces was present in large numbers and was successfully cultivated. It was impossible to ascertain the source and method of infection, although the patient had worked with cereals and had often slept on straw and hay; he could not recall any injury which might have served as an infection atrium.

47. **End Results of Prostatectomy.**—Casper reports the end results of fifty-four cases of prostatectomy done by him. Reports were received from twenty-six patients as to the condition of the bladder. These patients were operated on two to five years previously and none of them has any difficulty in urination, neither is there any pain. In 95 per cent. of his cases there was cystitis; 75 per cent. of these patients have been freed from this trouble entirely. In all cases in which the renal function was unimpaired before the operation, it remained unchanged after the operation and inasmuch as Casper does not operate unless the function of the kidneys is normal, no kidney disturbances occurred after these prostatectomies. In three cases the patients complained of severe lancinating pains in one or both legs. They resembled the pain of sciatica but disappeared about five months after the operation. Casper suggests that the pain was probably the result of the unavoidable injury done to the nerves of the hypogastric plexus during the operation. In those cases in which the prostatectomy was done because of severe hemorrhages from the prostate, further bleeding was not noted after the operation. In none of the cases was there a recurrence of the original trouble. Naturally, Casper favors operation when it is indicated.

Deutsche medizinische Wochenschrift, Berlin

July 27, XXXVII, No. 30, pp. 1377-1424

55 Senile Processes in Central Nervous System. (Alterserkrankungen.) W. Spielmeyer.
56 Physiologic Pathology of Bechterew-Strümpel's Disease, (Chronic Ankylosis of Spine). J. Plesch.
57 Local Anesthesia in Trigeminal Region. H. Braun.
58 Cause and Prevention of Apical Pulmonary Tuberculosis. (Entstehung und Verhütung der Lungenspitzentuberkulose.) Bacmeister.
59 Tuberculosis of Genital and Uropoëtic System of Female. A. Sippel.
60 *Therapy of Gastric Hyperacidity. H. Winternitz.

61 *Roentgenologic Determination of Gastric Hyperacidity. (Eine Aziditätsbestimmung des Mageninhalts mittels des Röntgenverfahrens.) E. Schlesinger.
62 Operative Treatment of Hay Fever. (Doppelseitige Resektion des N. ethmoidalis anterior.) T. Albrecht.

August 3, No. 31, pp. 1425-1464

63 Peristalsis of Colon. (Röntgenbeobachtungen.) G. v. Bergmann and E. Lenz.
64 Apparatus for Registering Heart Tones Photographically. R. Ohm.
65 Senile Processes in Central Nervous System. W. Spielmeyer.
66 Case of Rupture of Longitudinal Sinus. Wieting.
67 Errors in Serodiagnosis of Echinococcosis. A. Brauer.
68 Case of Reinfection with Syphilis after Salvarsan Treatment. R. Krefting.
69 Angina Ulcerosa in Tanger Fever. M. Steiner.

August 10, No. 32, pp. 1465-1504

70 Heredity of Disease. F. Pick.
71 Chronic Poisoning, Especially with Lead. W. Straub.
72 *Cholera Vibrios and Hemolysis. R. Kraus, D. A. L. Graham and Z. Zia.
73 Treatment of Acute Suppurative Nephritis. (Ueber Bakteriensteine im Nierenbecken, zugleich zur Behandlung der akuten, eitrigen Nephritis.) A. Neumann.
74 *Acetylsalicylic Acid for Cough. W. Ebstein.
75 Serodiagnosis of Tuberculosis and Syphilis by Means of Viscosimeter. K. Csépai and A. v. Torday.
76 *Treatment of Carcinoma of Uterus with Radium Rays. E. Arendt.
77 *Phenolphthalein Blood Test. P. A. Kober.
78 Wassermann Reaction in Examination of Prostitutes. W. H. Dreuw.

60. **Hydrogen Peroxid in Hyperacidity.**—According to Winternitz, solutions of hydrogen peroxid, even in very slight concentration, reduce gastric acidity but not for any great length of time. He has therefore abandoned this method of treatment and has returned to the use of alkalies.

61. **Determining Gastric Acidity by Means of Roentgen Rays.**—In the procedure adopted by Schlesinger, the patient is fed bismuth mush in any desired form and there is then noted the size of the so-called magenblase or stomach bubble and the rapidity with which the bismuth mush is digested. A roentogram is taken as soon as the bismuth mush enters the stomach. Another picture is taken one hour later. The patient is then urged to drink several ounces of water, containing 10 per cent. of sodium. Two minutes afterward another roentogram is made. This second picture shows a distinct enlargement of the magenblase which is the important part of the procedure. The difference in the size of the magenblase in the first and second pictures shows the amount of CO_2 liberated from the sodium and furnishes the means of estimating the acidity of the gastric contents. The greater the amount of CO_2 the greater is the acidity.

72. **Toxicity of Cholera Vibros.**—The authors ascertained that all of the strains of cholera vibrios obtained during various epidemics occurring in the past three years did not produce any hemotoxins. If, however, organisms grown on blood-serum are used, hemolytic vibrios are produced; therefore methods of culture are recommended for differential purposes; that is, organisms grown in ordinary bouillon media are not hemolytic, whereas blood-serum cultures are hemolytic.

74. **Acetylsalicylic Acid for Cough.**—To allay distressing cough Ebstein gives acetylsalicylic acid. He reports several cases in which only good effects were obtained from this medication. One patient failed to get any relief from the use of codein. Acetylsalicylic acid gave immediate relief. Ebstein says that it not only gives relief but it effects a cure, besides materially shortening the duration of the illness.

76. **Radium Therapy in Carcinoma.**—Arendt recommends radium therapy in those cases in which a radical operation is, beyond question, hopeless, and to prevent recurrence. In the so-called inoperable cases, however, he would remove as much of the carcinoma as possible before resorting to radium therapy. He emphasizes the necessity for circumspection and caution in the use of the radium. Of eighteen cases, ten patients died, eight are living and are now being treated by Arendt. Six of these are in good condition, two are nearing death, three of the patients are following their occupations, the remaining three having the appearance of well persons. In eight cases a complete hysterectomy was performed, four patients had a recurrence. Only one patient of four subjected to radium treatment has had a recurrence. Therefore, Arendt is a firm believer in the use of radium to prevent recurrence after radical operations undertaken to remove a carcinomatous uterus.

77. **Phenolphthalein Blood Test.**—Kober is of the opinion that this test should not be accepted as a positive one, because both positive and negative results are open to question of doubt. He would not use either Meyer's or Fleig's reagent to test for blood.

Zeitschrift für Kinderheilkunde, Berlin

II, No. 6, pp. 437-548. Last indexed July 29, p. 435

79 Methods for Systematic Research on Metabolism of Salt in Infants. (Einige Bemerkungen zur Methodik der Erforschung des Salzstoffwechsels des Säuglings.) B. Salge.
80 Experiences with "Albumin Milk." (Erfahrungen mit Eiweissmilch.) P. Grosser.
81 Analysis of "Albumin Milk." H. Pelka.
82 *Urobilinuria with Measles. (Urobilinurie bei Masern.) E. Rach and A. von Reuss.
83 Infant Feeding with Little Sugar and Much Fat. (Zur Frage der zuckerarmen und fettreichen Ernährung.) I. Rosenstern.
84 Non-Gonorrheal Ophthalmia Neonatorum. (Ueber nichtgonorrhoische Säuglingsblennorrhoe.) L. Halberstaedter.
85 *Mumps in Connection with Disease of the Auditory Nerve and Labyrinth. (Beziehungen von Acusticus- und Labyrintherkrankungen zur Parotitis epidemica.) H. Haike.
86 Elimination of Sugar in Infants. (Beitrag zur Zuckerausscheidung im Säuglingsalter.) H. Nothmann.
87 *The Cutaneous Tuberculin Reaction. A. Radziejewski.
88 *The Parathyroids, Especially in Relation to Tetany in Infants. (Eine Untersuchung über die Epithelkörperchen mit bes. Berücksichtigung ihrer Beziehungen zur Säuglingstetanie.) R. W. Bliss.

82. **Urobilinuria in Measles.**—Rach and Reuss found urobilinuria in the course of measles in all but four of fifty-one cases, that is, in 92 per cent., but frequently it was slight and transient. It rarely lasted more than a few days and was usually mild, never reaching the intensity of the urobilinuria in scarlet fever. When the urobilinuria was protracted there was always some complication justifying the assumption of insufficiency of the liver. The direct complications of measles did not seem to affect the urobilinuria. It was never observed until toward the end of the eruption phase.

85. **Mumps and the Ear.**—Haike reports the case of a young man of 19 who became suddenly deaf after a few days of malaise and slight fever but no local pain or vertigo. The other features of the case suggested mischief in the labyrinth, and three days later bilateral orchitis developed with high fever and much depression, the young man losing 20 pounds in the course of a month. The mumps seemed to have affected the internal ear first, and permanent deafness has resulted. There was no involvement of the parotid at any time. Gradenigo has reported a somewhat similar case in a boy under 5 years old whose smaller brother had mumps. The older had pains and swelling in the testicles but these subsided under cold applications. The next day sudden deafness developed and was permanent. There were no symptoms on the part of the parotid at any time. In Haike's case there was no known chance for contagion with mumps in the town, but he thinks it should be classed as "epidemic parotitis without parotitis," and believes that this assumption will explain other cases of sudden, bilateral deafness in children, usually accompanied by some mental disturbance at first such as may accompany mumps.

87. **The Cutaneous Tuberculin Reaction.**—Radziejewski writes from the children's clinic at Breslau in charge of von Pirquet to relate the findings at necropsy as compared with the cutaneous tuberculin reaction during life in thirty-nine cases reported in detail and in 327 others. All the data confirm the specific importance of the reaction, and that a negative reaction—in the absence of cachexia, miliary tuberculosis and meningitis—excludes tuberculosis with almost certainty. A positive reaction in infants is almost inevitably of evil prognosis as the active process generally proves fatal and the tuberculous process is never inactive in infants.

88. **The Parathyroids and Tetany.**—Bliss was not able to detect any special connection between hemorrhagic changes in the parathyroids and tetany in children. He examined with the microscope the parathyroids in thirty-five child cadavers from a few months to nine years old, finding them normal in a number of cases and with hemorrhagic changes in others, but with no parallel connection with the convulsions observed in some of the children during life.

Zeitschrift für Urologie, Berlin

July, V, No. 7, pp. 497-584

89 *Litholapaxy. (145 Litholapaxien.) M. Kreps.
90 *Syphilis of the Bladder. (Die syphilitischen Erkrankungen der Harnblase.) P. Asch.
91 *Tardy Hemorrhage after Nephrotomy. H. G. Pleschner.

89. Litholapaxy.—Kreps reviews 145 cases in which he crushed and removed by suction one or more stones in the bladder. Only eight of the patients were females; the ages ranged from 8 to 82 years. He calls attention to the efficacy of long-continued pressure in breaking up even very hard stones. The long pressure changes the molecular structure of the stone, so that it crumbles when at first it seemed impossible to produce any impression on it. Even a few minutes' longer pressure may accomplish the desired result. One of his patients was an unmarried woman of 26 who ceased menstruating and the abdomen increased remarkably in size. A pregnancy was assumed but the trouble proved to be a soft phosphate stone entirely filling the bladder and distending it to simulate the pregnant uterus. After the litholapaxy menstruation returned, the patient married and a normal pregnancy followed.

90. Syphilitic Lesions in the Bladder.—Asch has encountered three cases of true bladder syphilis and a large number of parasyphilitic bladder affections in the last twelve years, and he compares these experiences with the literature on the subject. The bladder is usually affected, if at all, during the third phase of syphilis. These syphilitic affections of the bladder seldom have a specific aspect and their true nature may be unsuspected. Gummas often simulate papillomas and he suggests that it is wise to examine for syphilis in every case of papilloma of the bladder. Gummatous growths cause manifestations like those from any neoplasm, except that they are liable to induce considerable hemorrhage; the hematuria is distinguished by its continuance from beginning to end of the urination, while with ulcer, even the syphilitic, the hemorrhage is more terminal. Treatment should be the general specific treatment without local measures. General treatment is liable to induce pronounced benefit in tabetic bladder disturbances. Asch cites forty-three recent publications on the subject of syphilis of the bladder.

91. Hemorrhage After Nephrotomy.—In the three cases reported by Pleschner the hemorrhage came on suddenly with no premonitory symptoms, the fourth, sixth, twenty-fifth and thirty-third days after the nephrotomy for removal of stones. All bleeding vessels had been ligated, the kidney sutured and tamponed firmly from without and the hemorrhage occurred when all was supposed to be progressing ideally. The hemorrhage was arrested in one of the cases under expectant measures but returned again eight days later and more severe. An important aid in diagnosing was the discovery with the cystoscope of the blood spurting from one ureter mouth.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 13, XXXII, No. 84, pp. 883-890

92 Marked Benefit from Roentotherapy in Myelogenous Leukemia; Two Cases. A. Austoni.

July 15, No. 85, pp. 891-906

93 Pathologic Urine. F. Bottazzi.
94 Case of Lymphosarcomatosis with Chylothorax. L. Zagari.

Policlinico, Rome

July, XVIII, Medical Section No. 7, pp. 285-332

95 *Percussion of the Spine in Differentiation of Compression of the Trachea. (Di un nuovo segno fisico di compressione tracheale ricavata dalla percussione delle vertebre.) G. Stradiotti.
96 Pseudochylous Ascites. M. Barberio.

95. Percussion of the Spine in Differentiation of Compression of the Trachea.—Stradiotti calls attention to the difference in the findings on percussion of the vertebræ when the mouth and nostrils are open or closed. In a case described in detail certain modifications in the percussion findings were explained by discovery of a tumor in the anterior mediastinum compressing the trachea and causing resonance when the corresponding vertebræ were percussed. Experiments on the cadaver confirmed the importance of this physical sign of compression of the trachea.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, Etc., With the Pronunciation, Derivation, and Definition. Including Much Collateral Information of an Encyclopedic Character. Together with New and Elaborate Tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Diplococci, Micrococci Streptococci, Ptomains and Leukomains, Weights and Measures, Eponymic Tables of Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. By W. A. Newman Dorland, A.M., M.D., Member of Committee on Nomenclature and Classification of Diseases of the American Medical Association. Sixth Edition. Leather. Pp. 986, with illustrations. Philadelphia: W. B. Saunders Co., 1911.

MALARIA: ITS PREVENTION AND CONTROL. By Graham E. Henson, M.D., E. Van Hood, M.D., and E. W. Warren, M.D., Special Committee of the Florida Medical Association for the Control and Prevention of Malaria. State Board of Health of Florida, Jacksonville. Publication 84. Paper. Pp. 43, with 9 illustrations. June, 1911.

NATURE SKETCHES IN TEMPERATE AMERICA. A Series of Sketches and a Popular Account of Insects, Birds, and Plants, Treated from Some Aspects of Their Evolution and Ecological Relations. By Joseph Lane Hancock, M.D., F.E.S. Cloth. Price, $2.75 net. Pp. 451, with 227 illustrations. Chicago: A. C. McClurg & Co., 1911.

FOURTEENTH ANNUAL REPORT OF THE GERMAN METHODIST DEACONESS HOME AND BETHESDA HOSPITAL, CINCINNATI. From January, 1909, to January, 1910. Paper. Pp. 72, with illustrations.

AFTER SUNRISE, OR SECOND ATTEMPTS AT POETRY. By Philip Matthew Wagner, Author of "At the Dawn," etc. Cloth. Price, $1. Pp. 155. P. M. Wagner, Canal Dover, Ohio, 1909.

HEARINGS BEFORE THE COMMITTEE ON EXPENDITURES IN THE DEPARTMENT OF AGRICULTURE. Aug. 21, 1911. Paper. Pp. 841-914. Washington: Government Printing Office, 1911.

FORTY-FOURTH ANNUAL REPORT OF THE HOME FOR INCURABLES. Third Avenue and One Hundred and Eighty-First Street, New York. Paper. Pp. 70, with illustrations.

THE TWENTY-EIGHTH ANNUAL REPORT OF THE BISHOP CLARKSON MEMORIAL HOSPITAL FOR CHILDREN, OMAHA, May 1, 1911. Paper. Pp. 45.

ANNUAL REPORT OF THE MT. SINAI HOSPITAL FOR THE EIGHTH YEAR, Jan. 1 to Dec. 31, 1909. 17 Staniford Street, Boston. Paper. Pp. 29.

ANNOUNCEMENT OF SCARLET OAKS SANITARIUM, LAFAYETTE AVENUE, CLIFTON, CINCINNATI. Paper. Pp. 34, with illustrations.

New Patents

New Patents of Interest to Physicians

990415 Individual thermometer holder. Eustace T. Baker, Spokane, Wash.
990525 Stretcher for fractures. Thomas A. Christy, Hot Springs, S. Dak.
990325 Receptacle or case for thermometers and the like. Herbert J. Winn, Rochester, N. Y.
991261 Pharmaceutical preparation, Ferdinand von Arlt, Vienna, Austria-Hungary.
991130 Druggist's label cabinet. Henry W. Broemmelsiek, St. Louis.
991348 Prescription file. John D. Mulloy, Portland, Ore.
991015 Protector for hypodermic needles. Joseph Payne, Belmont, Mass.
991022 Pocket syringe. David W. Rees and H. E. Carmichael, Needles, Cal.
991104 Crutch. Samuel J. Trask, Utica, N. Y.
991767 Apparatus for producing ozone. Charles G. Armstrong, Orange, N. J.
991820 Device for preventing sensickness and also applicable to lifts on board ship. Henry Baumgartner, Bradford, England.
991825 Disinfectant holder or container. James R. C. Bogie, Urmston, England.
991831 Ankle support and protector. Henry J. Collis, Taunton, Mass.
991844 Therapeutic bottle. Louis F. Gillette, Concord, N. Y.
992013 Surgical appliance. Sackville G. Leyson, Syracuse, N. Y.
991560 Enzyme. Jokichi Takamine, New York.
991561 Amyloiytic ensyme. Jokichi Takamine, New York.
991808 Pasteurizing apparatus. August Tiesse, Chicago.
992639 Disinfecting cabinet. William C. Burrichter, Panora, Iowa.
992348 Atomizer or volatilizer. George H. Goldsmith, Saylesville, and J. C. Rankine, Pawtucket, R. I.
992205 Tunnel and plate holder slide for x-ray picture. John R. Kelley, Cincinnati.
992671 Bed for invalids. Clarence R. Kester, Laton, Cal.
992254 Producing a medicinal composition. Hubert Rieck, Irvington, N. J.
992265 Preserving hydrogen peroxid solution. Max Schlaugk, Hanover, Germany.
992282 Dispensing device for soda water fountains. George W. Speyer, Philadelphia.
992302 Electric machine for therapeutic purposes. Reinhold H. Wappler, New York.
41335 Soda fountain design. Fisher H. Lippincott, Philadelphia.